IN TRANSITION:
DOCTORS, DISEASE AND THE DECLINE OF HOME BIRTH

by

GAIL PAT PARSONS

DISSERTATION

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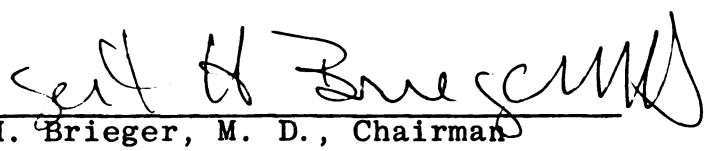
ABSTRACT

A feminist reconstruction of the past implies childbirth was safer for women when it took place in a woman-directed, home-centered, expectant environment. The male doctor with dirty hands and soiled instruments brought puerperal fever into a once pristine setting, and eventually used the reality of post-partum disease to maneuver childbirth out of the home and into a hospital. There, they transformed a natural, social occasion into a medical event demanding the latest pharmacology and the most advanced technology. Male doctors, it is charged, have achieved a hegemony over childbirth.

It is the purpose of this study to show that professional prejudice toward hospital birth cannot be attributed to the needs of a predominantly male medical profession to establish both male and professional dominance over the act of childbirth. Rather, it occurred, in part, because hundreds of troubled physicians sought control over a lethal infection for which many of them felt personally responsible. Their growing dissatisfaction with home-based birth was neither predictable nor orchestrated. Physicians themselves had historically questioned the safety of hospital birth, and they resorted to it only after protracted controversy over the probable cause of puerperal fever and what measures they might take to prevent its occurrence. As the explanations for the cause of disease changed, so, too, did doctors' attitudes toward hospitals. As doctors--and their patients--learned more about the biological origins of human disease, they questioned the safety

of any birth which took place in an uncontrolled, possibly, septic environment. The imperative of a sterile, aseptic birth setting as a primary defense against puerperal fever led to the decline of home birth in America.



Gert H. Brieger, M. D., Chairman

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INTRODUCTION

For more than a century, American doctors have been troubled by their inability to control the incidence of puerperal fever, a disease we know now that they themselves help spread among women in childbed. When the disease appeared at the Boston Lying-in Hospital in 1965, quarantine measures and mass inoculations of penicillin did not prevent it from striking twenty women. The pathogen was traced finally to a physician-anesthetist with an infected scratch on his hand, a minor wound resulting from weekend tending of rosebushes. The innocuous scratch contained infectious organisms which had been transmitted, ironically enough, with a comforting gesture--holding a woman's hand for reassurance while administering anesthesia during her labor and delivery. With their contaminated hands, the stricken women presumably then infected themselves by, for example, touching their genital area after urinating.[1] Like generations of their predecessors, doctors reacted to the outbreak with avoidance and denial of responsibility. "The mode of contamination has never been determined," insisted

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[1]James A. Fitzgerald, "Rosebush Scratch," N.Y. State J. Med. 72 (1972): 1077-80.

one report; while an editorial in the Journal of the American Medical Association stated flatly that "the carrier of the organism was completely innocent."[2]

This characteristic ambivalence of the medical professional toward his involvement in the dissemination of puerperal fever justifies partially the feminist critique of current obstetrical practices. It points to the continued threat of this insidious infection peculiar to parturient women as but one example of the ill effects brought about by the intrusion of the male physician into the birth environment. Statistics today show that only hemorrhage and toxemia of pregnancy exceed puerperal fever as a killer of women in childbed.[3] Indeed, it helps push maternal mortality rate in this country well above those of other

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[2]John Figgis Jewett et al, "Childbed Fever--A Continuing Entity," J.A.M.A. 206 (1968); 847; "Puerperal Fever Today," ibid., 367.

[3]Richard L. Sweet and William J. Ledger, "Puerperal Infectious Morbidity: A Two-Year Review," Am. J. Obstet. & Gynec. 117 (1973): 1093; David Charles and Thomas A. Klein, "Postpartum Infection," in Obstetric and Perinatal Infections, eds. David Charles and Maxwell Finland (Philadelphia: Lee & Febiger, 1973), p. 249; Ronald S. Gibbs and Allan J. Weinstein, "Puerperal Infection in the Antibiotic Era," Am. J. Obstet. & Gynec. 124 (1976): 769; Jorge D. Blanco, Ronald S. Gibbs and Yolanda S. Casteneda, "Bacteremia in Obstetrics: Clincial Course," Obstet. & Gynec. 5 (1981): 621-625; Candace Friedman, "Maternal Infections: Problems and Prevention," Nursing Clinic 15 (1980): 817-824; Joseph J. Klimek et al, "A Prospective Analysis of Hospital - Acquired Fever in Obstetric and Gynecologic Patients," J.A.M.A. 247 (1982): 3340-3343.

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industrialized nations.[4] A feminist reconstruction of the past implies childbirth was safer for women when it took place in a woman-directed, home-centered, expectant environment. Home birth acquired the trappings of a social event, an occasion for female camaraderie and the soothing exchange of shared experiences. Sisterhood acted both as an anesthetic and a preventive against disease. It reduced the anxiety of the woman in labor and, because the women attending her did not meddle unnecessarily in what they deemed to be a natural process, the chance of infection from unclean, prodding hands was lessened.[5] The male doctor

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[4]Demographic Yearbook, 1977 (New York: United Nations, 1978), pp. 358-60;

[5]Catherine M. Scholten described with unusual sensitivity a typical early birth setting in her award-winning essay, "'On the Importance of the Obstetrik Art': Changing Customs of Childbirth in America, 1760 to 1825," Wm. & Mary Quart. 34 (1977): 432.

For a feminist perspective on the intrusion of men into the practice of obstetrics see Datha Clapper Brack, "Displaced-- The Midwife by the Male Physician,"in Women Look at Biology Looking at Women, eds. Ruth Hubbard, Mary Sue Henifin and Barbara Fried (Cambridge, Mass.: Schenkman Publishing Co., 1977), pp. 87-92; Barbara Katz Rothman, In Labor: Women and Power in the Birthplace (New York: W.W. Norton & Co., 1982), pp. 50-63; Judith Barrett Litoff, American Midwives, 1860 to the Present (Westport, Conn.: Greenwood Press, 1978); Jane B. Donegan, "Man-Midwifery and the Delicacy of the Sexes," in Remember the Ladies: New Perspectives on Women in American History, ed. Carol V. R. George (Syracuse: Syracuse University Press, 1975): pp. 99-109; Gerda Lerner, "The Lady and the Mill Girl: Changes in the Status of Women in the Age of Jackson," in Our American Sisters: Women in American Life and Thought, 3rd ed., eds. Jean E. Friedman and William G. Shade (Lexington, Mass.: D. C. Heath & Co., 1982), especially pp. 186-187; Mary Roth Walsh, Doctors Wanted: No Women Need Apply

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with dirty hands and soiled instruments brought disease and death into that once pristine setting. Further, it is charged, he ignored the warnings of fellow physicians, Oliver Wendell Holmes (1809-1894) and Ignaz Semmelweis, (1818-1865), who, in the mid-nineteenth century, urged him to wash his hands for the sake of his female patients.[6] When the disregard of those warnings contributed to an ever-increasing incidence of puerperal fever, doctors, responsible for the infection in the first place, began to argue that the once natural process of childbirth had become an inherently pathological process conducive to a potentially fatal disease which demanded their unique

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(New Haven: Yale University Press, 1977): pp. 6-9; Alice Kessler Harris, Out to Work: A History of Wage-Earning Women in the United States (Oxford: Oxford University Press, 1982; Oxford University Press paperback, 1983), p. 117.

[6]This unflattering portrait of the mid-nineteenth century medical profession is particularly appealing to those who believe puerperal fever is strictly an iatrogenic disease. Richard W. Wertz and Dorothy C. Wertz, Lying-in: A History of Childbirth in America (New York: The Free Press, 1977), pp. 120-128; Patricia M. Branca, Middle Class Women in the Victorian Home (Pittsburgh: Carnegie Mellon University Press, 1976), pp. 86-89; Adrienne Rich, Of Woman Born: Motherhood as Experience and Institution (New York; W. W. Norton & Co., 1976; Bantam Books, 1977), pp. 144-148; Suzanne Arms, Immaculate Deception: A New Look at Women and Childbirth in America (New York: Houghton Mifflin, 1975; Bantam Books, 1977), pp. 21-22; A. J. Youngson, The Scientific Revolution in Victorian Medicine (New York: Holmes & Meier Publishers, Inc., 1979), p. 251; Walsh, Doctors Wanted, pp. 92-93; John S. Haller, American Medicine in Transition, 1840-1910 (Urbana: University of Illinois Press, 1981), pp. 164-66; Gena Corea, The Hidden Malpractice: How American Medicine Treats Women

expertise and its removal from the home setting to one in a hospital.

The medical professional achieved his "theft of childbirth"[7] by maneuvering it out of its historically sanctioned place in the home and into the "forced labor"[8] maternity wards of illness-oriented hospitals. There physicians transformed birth from a natural, social occasion into a medical occasion with all of the trappings of a surgical specialty demanding the latest pharmacology and the most advanced technology. Male obstetricians, according to feminist critics, subordinated women's individual needs to preordained procedures. They shaved, drugged and surgically split open women's bodies as preconditions for achieving a successful childbirth. Since hospital birth has become the norm and because the procedures used such as the lithotomy position, routine episiotomies and drugs designed to either induce or to stay labor are all dismissed as simply tools of convenience for the attending physician, feminist critics maintain that male doctors have achieved a hegemony over

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as Patients and Professionals (New York: William Morrow & Co., Inc., 1977), especially pp. 223-35.

[7]Adrienne Rich, "The Theft of Childbirth," in Seizing Our Bodies: The Politics of Women's Health, ed. Claudia Dreifus (New York: Vintage Books, 1977), pp. 146-63.

[8]Nancy Stoller Shaw, Forced Labor: Maternity Care in the United States (New York: Pergamon Press, 1974).

matters of childbirth.[9] They have realized finally what Suzanne Arms charges in her tract, Immaculate Deception, to be the historical desire of man "to extricate the process of birth from woman and to call it his own."[10]

The professional prejudice toward hospital birth cannot be attributed solely to the needs of a predominantly male medical profession, as some feminists charge, to

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[9]A sampling of this criticism can be found in Doris Haire, "The Cultural Warping of Childbirth," in The Cultural Crisis of Modern Medicine, ed. John Ehrenreich (New York: Monthly Review Press, 1978), pp. 185-200; Dana Breen, "The Mother and the Hospital: An Unfortunate Fit between the Woman's Internal World and Some Hospital Practices," in Tearing the Veil: Essays on Femininity, ed. Susan Lipshitz (London: Routledge & Kegan Paul, 1978), pp. 15-36; Hilary Graham and Ann Oakley, "Competing Ideologies of Reproduction: Medical and Maternal Perspectives on Pregnancy," in Women, Health and Reproduction, ed. Helen Roberts (London: Routledge & Kegan Paul, 1981), pp. 5-74; Andrea Ostrum, "Childbirth in America," in Women, Body and Culture: Essays on the Sexuality of Women in a Changing Society, ed. Signe Hammer (New York: Harper & Row, Perennial Library, 1975), especially pp. 290-291; Sheila Kitzinger, Women as Mothers (New York: Random House, 1978), particularly chapter 6; Sheryl Burt Ruzek, The Women's Health Movement: Feminist Alternatives to Medical Control (New York: Prager Publishers, 1979), pp. 103-142; Diana Scully, Men Who Control Women's Health: The Miseducation of Obstetrician Gynecologists (Boston: Houghton Mifflin Company, 1980); Robert S. Mendelsohn, Male Practice: How Doctors Manipulate Women (Chicago: Contemporary Books, Inc., 1981), chapters 13-24; Peter Lomas, "An Interpretation of Modern Obstetric Practice," in The Place of Birth, eds. Sheila Kitzinger and John A. Davis (Oxford: Oxford University Press, 1978), p. 174; Karen Ericksen Paige and Jeffrey M. Paige, The Politics of Reproductive Ritual (Berkeley: University of California Press, 1981), pp. 268-269; Joseph F. Kett, "The Search for a Science of Infancy," Hastings Center Report (1984): 35.

[10]Arms, Immaculate Deception, p. 25.

establish both male and professional dominance over the act of childbirth. Rather, it occurred, in part, because hundreds of troubled physicians sought control of a lethal infection for which many of them felt personally responsible. Their growing dissatisfaction with home-based birth was neither predictable nor orchestrated. Physicians themselves had historically questioned the safety of hospital birth, and they resorted to it only after protracted controversy over the probable cause of puerperal fever and what measures they might adopt to prevent its occurrence. As the explanations for the cause of the disease changed, so, too, did doctors revise their methods of prevention. When, in the mid-nineteenth century, the accepted epidemiology maintained an "evil smell caused sickness," doctors assumed naturally that "a pleasant one would remove it."[11] For this reason, chemicals which possessed the requisite deodorizing qualities became an important weapon against puerperal fever. As the "bad air" theory of disease causation declined in conjunction with the gradual ascendancy of the germ theory of disease, doctors reoriented their use of chemicals to those with bactericidal properties. Further, as doctors--and their patients--learned more about the pervasiveness and potency of those

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[11]Owsei Temkin, "An Historical Analysis of the Concept of Infection," in Studies in Intellectual History (Baltimore: Johns Hopkins Press, 1953), p. 132.

invisible organisms and their role in the genesis of puerperal fever, they increasingly questioned the safety of any birth which took place in an uncontrolled, possibly septic, environment. The imperative of a sterile, aseptic birth setting as a primary defense against puerperal fever led to the decline of home birth in America.

The history of puerperal fever over the past century and a half reveals a complex story primarily because Streptococcus pyogenes, the pus producing bacterium usually responsible for the genital tract infection called puerperal or childbed fever in the past and puerperal septicemia today, has enjoyed an obscure etiology and intractability. Infective organisms usually enter a woman's body through a lesion in the mucuous membrane sustained during the birth process. Passage of the fetus through the uterine cervical mouth and the birth canal, along with separation of the placenta, leaves the entire area raw. It is, in effect, an open wound. "After the baby is born the uterus. . . contracts to a much smaller size. The membrane that lines it remains intact and protects the tissues lying beneath. But this membrane does not cover the site where the placenta was attached and like all open wounds, blood oozes from the vessels in the raw area, and clots as soon as it reaches the uterine cavity. The serum. . . produced in this way. . . fills the cavity and drains out through the . . . cervix and the uterus to reach the vagina, and

eventually outside of the body. Here it encounters. . . microbes that may be present on the skin, clothing or bedding. Even if there are only a few streptococci in the vagina or on the skin outside, they can grow along the film of the serum to reach the interior of the uterus and the raw area of the placental site [making] puerperal fever. . . inevitable."[12] Exposed blood vessels invite bacterial invasion. A single streptococcal species can produce either a localized or a systemic disorder. Genital tract infection following childbirth can result in, for instance, peritonitis (inflammation of the membranes lining the walls of the pelvic and abdominal cavities), pyemia (pus in the blood with formation of multiple focal abscesses) or lymphangitis (inflammation of the lymph ducts, swollen with pus). Any of these complications can prove fatal.

The exact source of an infection is extremely hard to determine. The streptococcal organism responsible for puerperal fever can originate either outside of or inside of a woman's body. The endless external sources listed by Dr. Dora C. Colebrook in 1935 included "nasal secretions to a midwife's handkerchief and so to her hand; from a child's impetigo to the mother's washbasin and so again to the hand of the doctor or nurse; from a septic abrasion on the

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[12]Ronald Hare. The Birth of Penicillin (London: George Allen & Unwin, Ltd., 1970), p. 124.

mother's skin by way of her own fingers; or from an infected throat, either by droplet spray to the vulva or the accoucheur's hands, or by dissemination through the air in dust particles, perhaps, via bedding."[13] In addition to those exogenous sources, physicians have discovered recently that the anerobic streptococci usually present in the cervix and vagina can become pathogenic in the presence of traumatized tissue left in the wake of a completed childbirth. When any attendant examines a woman who has an undetected infection, that attendant can quite innocently spread those organisms to other women through direct inoculation or indirectly through droplet infection. Preventing the potentially deadly infection remains problematic today. Doctors now are painfully aware that they can infect women even if they observe "all time-honored surgical aseptic techniques such as the surgical scrub, the wearing of gown and mask and the use of gloves."[14]

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[13]D. C. Colebrook, The Source of Infection in Puerperal Fever due to Haemolytic Streptococci, Medical Research Council Special Report No. 205 (London: HMOS, 1935).

[14]Donald M. McIntyre, "An Epidemic of Streptococcus pyogenes, Puerperal and Postoperative Sepsis with an unusual Carrier Site--the Anus," Am. J. Obstet. & Gynec. 101 (1968): 312. Rochelle S. Filker and Gilles R. G. Monie, "Pospartum Septicemia Due to Group G. Streptococci," Obstet. & Gynec., 139 (1981): 686-89.

Recounting the history of puerperal fever and its essential role in the transition from home to hospital birth can contribute to American medical history in a number of ways. First, it recaptures the pluralism of the American medical profession by revealing the wide disagreements which existed among ordinary physicians instead of focusing exclusively on the "great doctors."[15] A continual

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[15]The persistent attraction of Holmes and Semmelweis for physicians writing medical history is revealed in the following brief sampling: Tiberius V. Gyory, "Oliver Wendell Holmes and Semmelweis," Br. Med. J. 2 (1906): 715-16; Fielding H. Garrison, An Introduction to the History of Medicine, 3rd rev. ed. (Philadelphia: W. B. Saunders Co., 1924), pp. 457-58; Palmer Findley, The Story of Childbirth (New York: Doubleday, Doran & Co., 1933), p. 199; Henry Sigerist, American Medicine (New York: W. W. Norton & Co., Inc., 1934), p. 114; Henry R. Viets, "A Mind Prepared: O. W. Holmes and 'The Contagiousness of Puerperal Fever,'" Bull. Med. Librarians Assn. 31 (1943): 319-25; Ralph H. Major, A History of Medicine, vol. 2 (Springfield, Ill.: Charles C. Thomas, 1954), p. 758; J. P. Greenhill, "Ignaz Semmelweis, Oliver Wendell Holmes and Puerperal Infection," Internat. Surg. Bull. 45 (1966): 28-31; Owen H. Wangensteen, "Surgeons and Wound Management: Historical Aspects," Conn. Med. 39 (1975): 568; James V. Ricci, The Development of Gynecological and Surgical Instruments (Philadelphia: Blakiston Co., 1949), p. 283; Norman Shafter, "The Evolution of American Medical Literature," in A History of American Medicine: A Symposium, ed. Felix Marti-Ibanez (New York: MD Publications, 1959), pp. 106-107; David Charles, "Postpartum Infection," 247. Note this emphasis ironically serves partially the feminist critique of modern obstetrics, and provides otherwise opposing viewpoints with a shared myth.

Erwin H. Acherknecht, with his usual clarity, challenged historians of medicine to uncover the history of the rank and file doctor in his classic essay, "A Plea for a 'Behaviorist' Approach in Writing the History of Medicine," J. Hist. Med. & Allied Sci. 22 (1967): 211-14. I attempted to respond to his challenge. "The British Medical Profession and Contagion Theory: Puerperal Fever as a Case

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emphasis on a few well-known physicians has impoverished our comprehension of both the complexities of the story of puerperal fever and the course taken by American obstetrics. Second, it reminds us, after the extraordinary emphasis in recent history on socio-cultural forces, of the importance of medical theory.[16] Theory informs, even if

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Study," Med. Hist. 22 (1978): 138-50. Academic historians are especially critical of the iatrogenic perspective. See, for example, John Woodward and David Richards, "Toward a Social History of Medicine,": in Health Care and Popular Medicine in Nineteenth Century England: Essays in the Social History of Medicine (New York: Holmes & Meier, 1977), pp. 15-55, and Barnes Riznick, "The Professional Lives of Early Nineteenth Century New England Doctors," J. Hist. Med. & Allied Sci. 19 (1964): 1.

[16]The continued research by academic historians promises to enrich our understanding of the symbiotic relationship which exists between medicine and society. This interpretative emphasis on the "external" world of medicine, however, has not been well received by physician/historians who are somewhat chagrined at the studied neglect by academics of the "internal" landscape of medical practice, the clinic and the laboratory, which is their purview. This division between historians of medicine is revealed in the pages of an influential journal when academic historians expressed umbrage at the tone of a book review written by a physician, in this instance, an obstetrician. He defended the review since, in his opinion, the authors in question had an obvious lack of clinical experience. Gordon W. Jones, review of American Midwives by Judith Barrett Litoff and Lying-in: A History of Childbirth in America by Richard W. Wertz and Dorothy C. Wertz, in J. Hist. Med. & Allied Sci. 34 (1979): 112-114; Letters to the Editor by Ronald Numbers, Judith W. Leavitt and Stuart Galishoff and Dr. Jones' response in ibid., 34 (1979): 456-458. See, too, Leonard G. Wilson's thoughtful editorial, "Medical History without Medicine," in ibid., 35 (1980): 5-7 and his disappointingly Luddite-like criticism of the programming of papers at national meetings. "History versus the Historians," in ibid., 33 (1978): 127-28; and the choleric essay by Ronald Numbers, "The History of Medicine: A Field in Ferment," Reviews in American History

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it does not determine, clinical behavior. The miasmatic theory and the germ theory of disease are integral parts to the story of the decline of home birth. Third, by illustrating everyday experience with a common disease, it balances the emphasis that has been placed on the dramatic epidemics of cholera and yellow fever, for example.[17] Finally, it offers an opportunity to illuminate one of the

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(1982): 245-263 and the comments on Numbers' essay by Robert P. Hudson contained within his review of Medical Thinking: A Historical Preface by Lester S. King in Bull. Hist. Med. 57 (1983): 472-474.

A continued breach between the two groups will be ironic since all students of history have forced upon them the unsettling (and intellectually challenging) conclusion that in attempting to explain any person, event or behavior numberous theories cunningly suggest themselves. For my part, I have the same attitude toward history written by physician-historians as that written by quantifier-historians: it is not the kind of history I want to write, but I rely continually on the fruits of their labor.

And, on a personal note, since I have never experienced childbirth, I welcomed the opportunity to participate recently at the birth of Ashley Everhard Stratemeier in the hospital and the birth at home of my godchild, Alison Logan Mayer. Both experiences were instructive--and quite joyful.

[17]Charles E. Rosenberg, The Cholera Years: The United States in 1832, 1849 and 1866 (Chicago: University of Chicago Press, 1962); John Duffy, Sword of Pestilence: The New Orleans Yellow Fever Epidemic of 1853 (Baton Rouge: Louisiana State University Press, 1966); J. H. Powell, Bring Out Your Dead: The Great Plague of Yellow Fever in Philadelphia in 1793 (Philadelphia: University of Pennsylvania Press, 1949; New York: Time, Inc. special edition paperback, 1965); Thomas H. Baker, "Yellowjack: The Yellow Fever Epidemic of 1878 in Memphis, Tennessee," Bull. Hist. Med. 42 (1968): 241-264; Erwin H. Ackerknecht, "Anticontagionism between 1821 and 1867," Bull. Hist. Med 22 (1948): 562-593. Richard Shryock traces this emphasis to the abundance of source material. "Medical Sources and the Social Historian," in Medicine in

most neglected areas of medical history, the role of the patient as an actor with attitudes and reactions of her own rather than as the mere passive pawn of the medical profession.[18]

America: Historical Essays (Baltimore: John Hopkins Press, 1966): p. 278.

[18]Many years ago, the late George Rosen urged historians to integrate the history of patients into their studies. "A Theory of Medical Historiography," Bull. Hist. Med. 8 (1940): 655-665; "Levels of Integration in Medical Historiography: A Review," J. Hist. Med. & Allied Sci. 4 (1949): 460-467. Recently, F. B. Smith noted the continued absence of patients' history in the history of medicine which remains iatrogenic for the most part. The People's Health (New York: Holmes & Meier, 1979), p. 9. See, too, the comments of Mary P. Ryan, "Reproduction in American History," J. Interdiscp. Hist. 10 (1979): 324-325.

CHAPTER I

THE MIASMATIC THEORY OF DISEASE AND THE CONTAGIOUSNESS OF PUERPERAL FEVER

Home birth has never been risk-free for women.[1] During the 1840s, for instance, puerperal fever occurred "in every situation and condition of life, in the populous town and the lonely settlement, in the homes of the rich and log cabin of the poorest squatter."[2] The disease seemed on the verge of becoming endemic to all women brought to childbed just as men in increasing numbers entered the practice of obstetrics. Most histories of puerperal fever in America acknowledge that simultaneous development; and, for the most part, agree male doctors carried the highly contagious disease from woman to woman. Oliver Wendell

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[1]Description of a febrile condition following childbirth can be found in the fifth century, B. C. Hippocratic tract, "Epidemics, Book I," Hippocratic Writings, ed. G. E. R. Lloyd (New York: Pelican Classics, 1978), pp. 111-112; and, in the mid-seventeenth century, colonists recognized "a cold and swet (sic) taken in childbed." John B. Blake, Public Health in Town of Boston, 1630-1822 (Cambridge: Harvard University Press, 1959), p. 2. Fielding H. Garrison cites Thomas Willis (1621-1675) as the "first to describe and name puerperal fever." An Introduction to the History of Medicine, 3rd rev. ed. (Philadelphia: W. B. Saunders Co., 1924), p. 263.

[2]Charles Hall and George Dexter, "Account of

Holmes (1809-1894) is usually singled out for special recognition since his prescient essay, "The Contagiousness of Puerperal Fever," published in 1843, warned fellow physicians that unless they observed some manner of personal hygiene before participating in a birth, they could become a "private pestilence." His message provoked "heated opposition" from a then decidedly anticontagionist medical profession. Denials of responsibility for the spread of puerperal fever came from learned doctors who disregarded, as well, the suggestion their lack of cleanliness contributed to the disease. Anticontagionist resistance to Holmes' theory, according to the traditional telling of the story, assured the needless deaths of untold numbers of women.[3]

Erysipelatous Fever as it Appeared in the Northern Section of Vermont and New Hampshire in the Years, 1842-3," Am. J. Med. Sci. 7 (1844): 21.

[3]Holmes' essay appeared initially in the short-lived New England Quart. J. Med. & Surg. 1 (1843); and subsequently reprinted in an expanded version, Puerperal Fever as a Private Pestilence (Boston: Ticknor and Fields, 1855). Both are reprinted in Medical Classics 1 (1936): 195-268, and all citations to either hereinafter refer to pagination in the latter source. The following represent a sample of what has become a canon of American medical history: Wyndham E. B. Lloyd, A Hundred Years of Medicine, 2nd ed. (London: Gerald Duckworth & Co., Ltd., 1968), p. 92; Henry Sigerist, American Medicine, (New York: W. W. Norton & Co., Inc., 1934), p. 113; Edwin F. Daily, "Notes on Puerperal, 1843-1943," Am. J. Obstet. & Gynec. 46 (1943): 479-480; Charles Edward A. Winslow, The Conquest of Epidemic Disease: A Chapter in the History of Ideas (Princeton: Princeton University Press, 1944; Madison: University of Wisconsin Press, 1980), p. 295; James V. Ricci, One Hundred Years of Gynecology (Philadelphia: Blakiston Co., 1945), p. 19; Francis H. Hayden, "Maternal Mortality in History and Today," Med. J. Australia 1 (1970):

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A variety of compelling reasons informed a doctor's particular stance on the issue of the contagiousness of puerperal fever. The most persuasive, though, was the mandate to reconcile his actual clinical experience with the disease against available epidemiological theory. The intensely bitter exchange between contagionist and anticontagionist becomes more comprehensible by recalling that both were constrained to explain different clinical experiences within the framework of shared epidemiology, the miasmatic theory of disease. They located the cause of most diseases in miasm ("bad air," an atmosphere polluted by unseen vapors emanating from decomposing organic matter); and contagion had been defined within the limits of that

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104; Phyllis Allen, "Etiological Theory in America Prior to the Civil War," J. Hist. Med. & Allied Sci. 2 (1947): 516; Richard H. Shryock, Medicine and Society in America, 1660-1860 (New York: New York University Press, 1960), p. 134; Douglas Guthrie, A History of Medicine (Philadelphia: J. B. Lippincott Co., 1946), p. 319; Erwin Wheeler, "The Development of Antiseptic Surgery," Am. J. Surg. 127 (1974): 574; and note no. 15 in the Introduction. Few historians have ventured revision to the above orthodoxy. Gert H. Breger, ed. Medical America in the Nineteenth Century (Baltimore: John Hopkins Press, 1972), p. 45 and C. H. Peckham, "A Brief History of Puerperal Fever," Bull. Hist. Med. 3 (1935): 203. This article contains an excellent bibliography through its publication date. See, too, Herbert Thomas, Chapters in American Obstetrics, 2nd. ed. (Springfield, Ill.: Charles C. Thomas, 1933), p. 62.

On the dominance of anticontagionism see the classic essay by Erwin H. Ackerknecht "Anticontagionism between 1821 and 1867," Bull. Hist. Med. 22 (1948): 562-593; Blake, Public Health in the Town of Boston, p. 200; Charles E. Rosenberg, The Cholera Years: The United States in 1832, 1849 and 1866 (Chicago: University of Chicago Press, 1962; Phoenix Books, 1974), pp. 75-79; Shryock, Medicine and Society, p. 63.

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theory as the sequential transfer of a specific miasm, a contagion, from a sick person to a well person who contracted the identical disease and so on again. Since puerperal fever usually spread indiscriminantly from woman to woman, many doctors opposed labeling it contagious. Pressed to defend their theory against the weight of experiential evidence to the contrary, contagionists were forced to assault the time-honored definition of contagion by introducing the notion of the doctor as an intermediate, asymptomatic carrier. They pointed to outbreaks of puerperal fever among the patients of a lone doctor, claiming he carried the disease-causing miasm to other women. The claim invited disbelief. For it to have any validity, anticontagionists charged, every woman assisted by the supposedly suspect physician should contract puerperal fever since all had been exposed to the miasm carried by him. Experience indicated otherwise. Contagionist and anticontagionist remained at odds, each side volleying opposing evidence. Those differences should not be exaggerated: both accepted miasm as the ultimate pathogen. Orthodoxy did not preclude disagreement, but it imposed strict parameters on the debate over the contagiousness of puerperal fever. Locating the conflict between contagionist and anticontagionist within those boundaries reveals how a shared scientific doctrine separates doctors from one another while, at the same time, it binds them together.

After a year-long residency at the New York Alms House, Philip Davenport concluded in 1841 that "of all the causes of puerperal fever, none [held] a more important station than. . . a vitiated state of the atmosphere," such pollution due to the presence of "minute deleterious particles, inappreciable to the human senses, termed miasmata." For centuries, the concept of miasm had provided physicians like the young resident with the first cause of most human disease. The Hippocratic author of Breaths, for example, in the fifth century B. C. declared "air. . . infected with such pollutions as are hostile to the human race" as the cause of devastating epidemics. Much later, the idea held firm. The seventeenth century physician known as the "English Hippocrates," Thomas Sydenham (1624-1689) thought epidemics occurred when the "air. . . abounds with particles as injure the human body." In America, the miasmatic theory of disease found a most persuasive disciple in Benjamin Rush (1745-1813). Rush, perhaps the most influential physician of his time, identified the exciting cause of disease common to the inhabitants of Philadelphia as "first and foremost, decaying vegetable matter." His list of potential contaminants appears quaint, but the residents of that growing metropolis appreciated the danger of breathing the fumes given off by "cabbage, . . . old books [and] a hog stye." Rush, never less than vigorous in his battle against disease, advocated extreme preventive

measures to rid the city of the "influences of those morbid exhalations." He urged the slaughter of small animals en masse believing the stench from their rotting carcasses would either "neutralize or destroy the [more] dangerous miasmata" from vegetables and printed matter. When epidemics of the same disease or diseases similar in nature appeared among a group of people sharing a common environment, physicians assumed naturally the cause lay in something shared by the population. Air seemed a logical culprit since, as the author of Breaths noted, "all men inhale the same wind."[4]

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[4]Philip A. Davenport, "An Essay on Puerperal Fever," N. Y. J. Med. & Surg. 4 (1841): 313-314; Hippocrates, "Breaths," in Hippocrates, trans W. H. S. Jones, vol. 2 (Cambridge: Harvard University Press, 1923), p. 235; The Entire Works of Dr. Thomas Sydenham, 5th ed. (1769), quoted in Winslow, Conquest of Epidemic Disease, p. 171. On Sydenham, see Kenneth Dewhurst, "Thomas Sydenham (1624-1689), Reformer of Clinical Medicine," Med. Hist. 6 (1962): 101-130; L. J. Rather, "Pathology at Mid-Century: A Reassessment of Thomas Willis and Thomas Sydenham," in Medicine in Seventeenth Century England, ed. Allen G. Debus (Berkeley: University of California Press, 1974), pp. 71-112; Lester S. King, "Empiricism and Rationalism in the Works of Thomas Sydenham," Bull. Hist. Med. 44 (1976): 1-11. Benjamin Rush, Medical Inquiries (1805), 2nd ed., quoted in Winslow, Conquest of Epidemic Disease, pp. 204-205; and, for more on Rush, J. H. Powell, Bring Out Your Dead: The Great Plague of Yellow Fever in Philadelphia in 1793 (Philadelphia: University of Philadelphia Press, 1949; New York: Time, Inc. special edition paperback, 1965), pp. 20-39; James Flexner, Doctors on Horseback (New York: Viking Press, 1937; New York: Dover Books, (1968), pp. 53-108; George W. Corner, ed. The Autobiography of Benjamin Rush (Princeton: Princeton University Press, 1948).

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By mid-nineteenth century that wind had become exceedingly foul in America. Appalling unsanitary conditions prevailed in all but the most isolated of settlements. Uncovered cesspools were common; while decaying garbage and waste from both animals and humans filled the streets. Investigative studies undertaken at the time gave alarming descriptions of the ill effects of the "civic miasmata"[5] on human health. Lemuel Shattuck (1793-1859), a pioneering social statistician, painted a bleak picture of Boston's deteriorating air quality in a report published in 1841. Mortality rates for children under the age of five years approximated 35 percent during the 1820s, but that figure had climbed to almost 45 percent by the time Shattuck completed his investigation. He attributed partially the ghastly increase to the "influence of bad air in confined, badly located and filthy houses." In 1848, the fledgling American Medical Association acted on what had become a widespread concern about the atmospheric origins of disease by forming a Committee on Public Hygiene. A year-long study persuaded the committee members urban mortality rates related directly to bad drainage, filthy streets, contaminated water supplies and faulty ventilation.[6]

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[5]Alfred Hudson, Lectures on the Study of Fever (Philadelphia: Henry C. Lea, 1869), p. 49.

[6]Barbara Gutmann Rosenkrantz, Public Health and the State: Changing Views in Massachusetts (Cambridge: Harvard University Press, 1972), pp. 18, 25.

Few Americans, layman and physician alike, doubted the ability of bad air to cause disease. Stephen Smith, an indefatigable advocate of public health legislation in New York City, emphasized in 1865 the danger of accumulating refuse. As it decomposed, he warned, "a vast amount of poisonous gases. . . escape, which will impregnate the entire district, penetrate the dwellings and render the atmosphere in the neighborhood to a high degree injurious to the public health."[7] The Reverend Matthew Hale Smith remembered the tenements he visited reeking with "a stench that would poison cattle," while another minister blamed the "putrid, damp and noisome vapors" for the destruction of both the moral fiber as well as the health of slum-dwellers.[8] Prompted by the warnings of civic leaders and health professionals, militant sanitationists, in a splendid example of doing the right thing for the wrong reason,

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[7]"New York the Unclean," New York Times, March 16, 1865, pp. 1-2, reprinted in Brieger, ed. Medical America, p. 267. On Smith's public health activism see Gert H. Brieger, "Sanitary Reform in New York City: Stephen Smith and the Passage of the Metropolitan Health Bill," Bull. Hist. Med. 40 (1966): 407-429.

[8]Sunshine and Shadow in New York (Hartford, 1869), p. 366 quoted in Robert H. Bremner, From the Depths: The Discovery of Poverty in America (New York: New York University Press, 1956; paperback ed., 1967), pp. 5-6; William Ellery Channing, "On the Elevation of the Laboring Classes," in The Works of William E. Channing, D.D. (Boston, 1889), p. 60, quoted in ibid., p. 5. For an indication of colonists' concern about bad air on their health see Blake, Public Health in the Town of Boston, p. 14.

spearheaded a "great sanitary awakening."[9] When the incidence of some diseases appeared to decline after the inauguration of public sanitation measures, most people equated the absence of disease with either the elimination or neutralization of miasmatic influences. The presence of disease, on the other hand, indicated the presence of miasmata in any of its various forms such as effluvia, emanations or exhalations.[10]

When Oliver Wendell Holmes conceded puerperal fever to be "so far contagious as to be frequently carried from patient to patient by physicians and midwives,"[11] his definition of contagion--and infection--was based on the miasmatic theory of disease; and, therefore, meant something quite different than it does today. According to modern definitions, contagion is simply the external spread of disease from person to person while infection describes an internal pathological process during which living microorganisms multiply within a host. The advent of microbiology made those definitions both possible and persuasive. In a prebacteriological era, doctors also

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[9]Winslow, Conquest of Epidemic Disease, pp. 236-266.

[10]Charles Rosenberg, "The Practice of Medicine in New York a Century Ago," Bull. Hist. Med. 41 (1967): 233; Allen, "Etiological Theory in America;" 492, 494.

[11]"Contagiousness of Puerperal Fever," 213, emphasis mine.

distinguished between contagion and infection. Their definitions reflected the science of their day which posited the existence of unseen, nonliving disease-causing substances in the air. For them contagion and infection denoted two different events; but each term was self-contained in that each explained at once how disease spread and what was being spread.

"By contagion," William Dewees (1768-1841), Professor of Midwifery at the University of Pennsylvania explained in his 1826 textbook, "is understood effluvia arising directly or indirectly from the human body under particular diseases, and capable of exciting the same disease in other persons to whom it may be applied."[12] Diseases considered contagious, smallpox, for example, predictably reproduced themselves from a sick person to a well one. The victim polluted the air with emitted "contagions" from his breath, the pus-filled sores covering his face as well as other normal evacuations such as urine and feces. Other persons exposed to those invisible, airborne contagions by either direct contact with the

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[12]William P. Dewees, A Treatise on the Diseases of Females (Philadelphia: H.C. Carey & I. Lea, 1826), p. 407 n. J. Whitridge Williams, himself an influential authority on obstetrics in the twentieth century, calls Dewees the "most influential writer on obstetrics in the first half of the nineteenth century." A Sketch of the History of Obstetrics in the First Half of the Nineteenth Century (n.p., n.d.), p. 33.

stricken person or indirectly through contact with the polluted air or material objects contaminated by that air soon experienced the onset of small pox. The distinguishing characteristic and the accepted proof of the contagiousness of any disease in the mid-nineteenth century was its unfailing capacity to reproduce itself within a heterogeneous population. Like always produced like.[13]

The idea of infection explained those diseases which appeared in a less predictable manner than contagious ones. In his History of Epidemic and Pestilential Diseases published in 1799, Noah Webster (1758-1843) defined infection as "that quality of a disease which may or may not excite it in a sound body within a suitable distance, or by contact; and which depends on heat, fouled air [and] an apt

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[13]Samuel Kneeland, "On the Contagiousness of Puerperal Fever," Am. J. Med. Sci. 11 (1846): 47. This article, according to Genevieve Miller, created considerable stir at the first meeting of the A. M. A. in 1847. "Medicine in 1847--the United States," Bull. Hist. Med. 21 (1947): 493. Thomas D. Mitchell, "Practical Remarks on Contagion and Infection," West. Lancet 5 (1846): 1; A. de Lezczynski, "Contagion," Ohio Med. & Surg. J. 6 (1852): 20-27; D.A. Morse, "On Contagion," Med. & Surg. Report 15 (1866): 591-531; Benjamin Rush, "Observations Upon the Origin of the Malignant Bilious or Yellow Fever in Philadelphia (1799)," quoted in Winslow, Conquest of Epidemic Disease, p. 202. It would seem the success of inoculation enhanced this definition of contagion. For a contrary view see Genevieve Miller, The Adoption of Inoculation for Smallpox in England and France (Philadelphia: University of Pennsylvania Press, 1957), p. 260.

disposition in the receiving body."[14] In contrast to contagious disease which ordinarily required some direct contact with a victim or at least contact with objects contaminated by him an infectious disease spread undetected through the atmosphere, the air one breathed. Doctors demystified the apparent immunity of certain individuals to infectious disease during an epidemic by invoking the notion of predisposition. They explained "that before any exciting cause of disease can exert its morbific influence on the animal economy, there must exist an alteration in it, . . . a certain susceptibility, which is called predisposition.[15] The ninteenth-century equivalent of the so-called "Type A" personality would, due to overwork and other debilitating

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[14]History of Epidemic and Pestilential Diseases (1799), quoted in Winslow, Conquest of Epidemic Disease, p. 223. Winslow states the work enjoyed small success, ibid., p. 215; however, George Sutton, a rural Midwestern doctor, referred to it in 1844 as an important resource. "Epidemic Erysipelas, known by the Popular Name 'Black Tongue' Which Recently Prevailed in Ripley and Dearborn Counties, Ia.," Am. J. Med. Sci. 7 (1844): 251. Mitchell, "Practical Remarks on Contagion and Infection," 1; Kneeland, "Contagiousness of Puerperal fever," 47.

[15]Kneeland, "Contagiousness of Puerperal Fever," 48. Charles D. Meigs asked students to consider a woman predisposed to the disease after hearing of an epidemic. Her distress "allowed a non-specific inflammation to fix itself upon the womb." Obstetrics: The Science and the Art (Philadelphia: Blanchard & Lea, 1852), p. 639. Rather than interpret the emphasis on a woman's emotional state as an avoidance tactic, I am convinced it made diagnostic sense to doctors who lacked our appreciation of bacteriology. A woman with a low-grade infection did not "feel" good, and probably acted (and was) frightened she would be the next victim during an epidemic of the disease.

habits, be prepared or predisposed to suffer the ill effects of infection-laden atmosphere. His neighbor or business associate who maintained a more moderate lifestyle appreciably encouraged his resistance to illness. Since infectious diseases did not reproduce themselves with clocklike precision, infection explained randomness. Exposure to dysentary did not always result in dysentary. Like, in other words, did not always produce like.

Contagionists had to amend successfully the established definition of contagion before their theory would enjoy any currency. This challenge was forced upon them since puerperal fever seldom traveled from woman to woman in any predictable pattern. Victims might have shared, at best, a passing acquaintance with one another, an observation which ruled out the possibility of direct contact between victims which orthodox wisdom required of a contagious disease. The erratic appearance of puerperal fever among a community of women did not silence doctors convinced of it contagious nature because, in some instances, stricken women shared a common link--the services of the same doctor. Known instances of what were called "personal puerperal fever"[16] epidemics prompted

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[16]Walter Channing, "On the Contagiousness of Puerperal Fever," Boston Med. & Surg. J. 52 (1855): 294-295. Channing referred to Gooch as the source for the phrase, probably Robert Gooch, teacher and author of A Practical Compendium of Midwifery (1832). Channing is

contagionists to advocate a most controversial amendment to the criteria used to determine contagion. They proposed the inclusion of the doctor as an intermediate, asymptomatic carrier. This contrasted sharply with the traditional explanation which relied upon the direct transfer of contagions from a sick person to a well one. The implications for the medical professional was obvious and for some of them persuasive. After delivering seven women who were stricken with puerperal fever, one doctor, for example, expressed his alarm "on the score of contagion" after learning that his were the only cases of the disease within the general area.[17]

Elaborating upon the traditional definitional limits of contagion to include an intermediate, asymptomatic carrier was not without cost of the professional who accepted it. It required, after all, that he implicate himself as the deadly link. Such concern, in retrospect, was most likely an exercise in assuming unearned guilt. This

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well-known for defending the use of obstetric anesthesia. A Treatise on Etherization in Childbirth (Boston: William D. Ticknor & Co., 1848). See also John Duffy, "Anglo-American Reaction to Obstetric Anesthesia," Bull. Hist. Med. 38 (1964): 32-44.

[17]"Quarterly Summary of the Transactions of the College of Physicians of Philadelphia," Am. J. Med. Sci. 4 (1842): 412. Note Holmes recounted most of this discussion which centered around the communicability of puerperal fever. "Contagiousness of Puerperal Fever," 222-224. Davenport, "Essay on Puerperal Fever," 317; Kneeland, "Contagiousness of Puerperal Fever," 63.

conclusion is based upon a consideration of both the epidemiological as well as the social context in which puerperal fever assumed an endemic character. Constant exposure to disease made doctors possible carriers of streptococcal infection. It is just as likely that they did not act as such carriers since the avenues by which women become infected with the bacteria responsible for puerperal fever are almost limitless. It is assumed here that the death and debility caused by the disease had more to do with the living conditions at the time and less to do with any shortcoming of the doctor. Whether they lived in a rural sodhouse, an indescribably filthy urban tenement or a neat clapboard house, women shared environments that were similar in nature. Lack of ventilation and uneven heat made respiratory ailments inevitable especially during the winter months. Sounds of coughing children disturbed the nighttime silence, and worried parents searched for quilts to cover the feverish bodies of their ailing daughters and sons. In the morning, family members shared the same pitcher and washbasin as they quickly washed up in a chilled room. A common towel dried all of their hands and faces. As the day wore on, a mother's calico apron provided a ready handkerchief for children with runny noses. Sneezing, coughing, even talking, placed potential pathogens into the environment. Handling commonplace utensils and nursing a sick child spelled potential disaster for a mother pregnant

once again. Through either droplet infection or direct inoculation by her own hand, a woman could introduce into her body the organism capable of becoming pathogenic in the presence of tissue which would most likely be lacerated during the course of her labor and delivery. Puerperal fever, under these conditions, was an almost predictable occurence.

Contagionists thought they precipitated epidemics of personal puerperal fever after being exposed to the particular miasm given off by a woman with the disease, an effluvia carried by them to other women in childbed. Clinical experience provoked the suspicion, and epidemiological theory verified it. A healthy, young woman would give birth and quickly regain her vitality. Then, suddenly and with no warning, within thirty-six to seventy-two hours of giving birth, she became feverish. Her body became "enormously swollen," and noxious pus-filled watery fluids escaped from the wound of childbirth. She vomited "black, coffee-ground colored liquid" which exploded from her mouth "in large quantities"[18] drenching her, her nightclothes, the bedlinen, the doctor's shirtsleeve, and the cloths he held to her mouth. An overwhelming stench began to engulf the warm, darkened room. Curtains, rugs and

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[18]Channing, "Contagiousness of Puerperal Fever," 294.

clothing started to smell. Mercifully, for many women, their horrible suffering ended as quickly as the disease had come upon them. Families celebrating the arrival of a new daughter or son put aside their gayety to make hurried preparations to bury the child's mother. When any doctor attended a woman stricken with puerperal fever, the contagionists tried to convince their colleagues, he exposed himself to miasmatic influences containing the specific contagions of the disease. That explained how puerperal fever "followed precisely [his] steps. . . tracing him far and wide with the certainty of a bloodhound."[19]

Contagionists rightly feared exposure to the effluvia emitted by the noxious, purulent fluids which escaped from a woman's body attacked by puerperal fever. It sickened healthy men and, regardless of age or circumstance, many otherwise healthy women.[20] When a doctor manually removed a placenta, he necessarily thrust "each arm in succession into the uterine cavity, where they were grasped

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[19]Kneeland, "Contagiousness of Puerperal Fever," 51.

[20]Charles Severn, "Remarks on Puerperal Fever," Boston Med. & Surg. J. 5 (1831): 156. He recognized the disease in an elderly female. D.F. Condie review of Oliver Wendell Holmes, The Physician as a Private Pestilence in Am. J. Med. Sci. 29 (1855): 459. William Harris reported during an epidemic a cat died "soon after she had kittens with all the characteristics of puerperal fever." "Contagion of Puerperal Fever," Boston Med. & Surg. J. 33 (1845-1846): 239.

by the neck," an operation not without the risk of "pustules" appearing later on searching arms. Washing smelly bedlinen produced "abscesses and diffuse inflammation" on the hands and arms of domestics, prompting contagionists to warn that "persons who have washed, or have otherwise handled the clothes or bedding soiled by the discharges of [puerperal fever], should not approach much less nurse, a woman after delivery."[21]

Further, the power of the effluvia from those tainted fluids did not abate even upon the death of woman from puerperal fever. Performing an autopsy on the victim had disastrous consequences for both the doctor and his future maternity patients. Should he sustain a slight cut on his hand while performing the dissection, it could become inflamed and "corrupt the whole map of the blood and fill [his] body with a loathsome disease."[22] Similar loathsome diseases awaited his patients in childbed. During the performance of an autopsy on a victim of puerperal fever, a doctor discovered massive amounts of pus in the abdominal cavity of the corpse which he "laded out with his hand." Shortly thereafter, he went to three deliveries. All three

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[21]Kneeland, "Contagiousness of Puerperal Fever," 55.

[22]Dr. Dawson, "Remarks on Puerperal Fever," in Proceedings of the Ohio Medical Convention (Columbus: S. Medary, 1847), p. 25.

women suffered complications following childbirth. One contracted "metritis," another "peritonitis" and the third died five days after giving birth to a stillborn infant. In between those calls, the doctor visited a fourth woman suffering from a severe postpartum hemorrhage. He moved quickly to determine the cause of the bleeding; and, during a manual examination of her uterus, discovered pieces of placenta lodged there. He promptly removed the offending debris hoping the evacuation would stop the life-threatening loss of blood. The woman died within the week. The beleaguered doctor, sensitive to the contagionists' warning that his "contact with [secreted matter] or things impregnated with it" could cause puerperal disease in women, vowed to forego all future participation in dissections rather than endanger the lives of those patients.[23]

Along with avoiding the autopsy, certain other precautions suggested themselves to doctors concerned about transporting an invisible, disease-causing cadaveric effluvia to women in childbed. Should a physician elect to take part in such operations, then he must, Oliver Wendell Holmes charged in 1843, "use thorough ablution, change every article of dress, and allow twenty-four hours or more to elapse before attending to any case of midwifery." If such

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[23]"Quarterly Summary of the College Physicians of Philadelphia," 416.

measures failed to prevent the occurrence of just one case of the disease in any subsequent women, Holmes insisted the doctor give up the practice of obstetrics for an indeterminate length of time.[24]

The need for personal cleanliness following their participation in a dissection might have appealed to some doctors' own sense of fastidiousness. Few, it can be imagined, relished carrying about on their person the stench of blood, pus and decomposing flesh into their own homes or that of their patients. As a primary defense against puerperal fever, though, cleanliness proved problematic. When medical students in Philadelphia asked their teacher, William Harris, if he thought puerperal fever had a "contagious nature," he admitted his ambivalence. Certainly, he conceded, the disease occurred in women attended by doctors who had performed autopsies and "for want of accommodation did not wash [their] hands carefully." It was just as true, however, that physicians who "routinely dissected the bodies

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[24]"Contagiousness of Puerperal Fever," 242. Although there were chemicals in use at the time, Holmes did not recommend any of them, preferring to suggest nothing more precise than "thorough ablutions." Hubert A. Lechevalier and Morris Solotororsky, Three Centuries of Microbiology (New York: McGraw-Hill, 1965; New York: Dover Books, 1974), p. 43. Holmes' one mention of chloride of lime in the 1843 essay came from a direct quote from letter sent to his friend, H. R. Storer, by a doctor who battled a puerperal fever epidemic in 1830 by washing his hand "in a solution of chloride of lime after each visit" to a woman with the disease. "Contagiousness of Puerperal Fever," 229, emphasis mine.

of females that died of puerperal fever. . . afterwards, without changing their clothing, attended lying-in women repeatedly without propagating the disease."[25] Neither clean clothing nor washed hands proved any guarantee against an attack of puerperal fever.

Holmes insisted a doctor abandon obstetrical work after a case of puerperal fever appeared within his practice. This struck Charles D. Meigs (1792-1869) as specious. Well-known as an educator, an author of numerous books on the diseases of females and an adept obstetrician, Meigs became one of the most vocal and influential critics of the contagion theory of puerperal fever. For this, he has been treated unfairly by history which portrays him, his grandson noted recently, as "the prototype of obstinant stupidity."[26] His anticontagionist posture, like the convictions of the contagionist, was based upon clinical experience. He had seen puerperal fever "destroy more women than all the other diseases and accidents of parturition put together;"[27] and, he shared with his foes the desire to prevent that tragedy from befalling as many families as possible. He described the family as "a little patriar-

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[25]Harris, "Contagion of Puerperal Fever," 240.

[26]J. Wister Meigs, "Puerperal Fever and Nineteenth-Century Contagionism: The Obstetrician's Dilemma," Trans. Coll. Phys. Phila. 42 (1975): 274.

[27]Meigs, Obstetrics, p. 614.

chate," and considered the "domestic catastrophe" equal in "importance of a great political overthrow."[28] Relying upon the facile suggestions of Holmes would only multiply those catastrophes. Cleanliness, even exile from one's patients, family and friends, could never ensure the prevention of puerperal fever. Meigs knew of one doctor, for instance, who, after having had 70 cases of the disease in his practice, fled the city. After his forced vacation of many days, he resumed his practice. He did not do so without taking precautions, however. The doctor had his head shaved, bought a new hairpiece, a complete change of clothing and "went into a bath, was washed clean, dressed himself, and then visited a woman in labor who was seized the next day and died." Meigs concluded contagion was "a vile superstition." It was simply "accident, or Providence" when puerperal fever mercilessly tracked a particular physician,[29] and no amount of soap and water or a closet full of new clothes could influence either force.

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[28]Charles D. Meigs, The History, Pathology and Treatment of Puerperal Fever and Crural Phlebitis (Philadelphia: Ed. Barrington & Geo. D. Haswell, 1842), p. 13.

[29]Meigs, Obstetrics, pp. 631-632; Charles D. Meigs, On the Nature, Signs and Treatment of Childbed Fevers (Philadelphia: Blanchard & Lea, 1854). Charles Rosenberg discounts the significance of theory and observation preferring to reduce Meigs' pronouncements on puerperal fever to status anxieties. According to Rosenberg, Meigs could not accept the contagiousness of puerperal fever because to do so "jeopardized [his] status

Even had a doctor's cleanliness proved reliable as a preventive against puerperal fever, he would have found himself prohibited from being as clean as he might have liked by the dictates of nature and, in some cases, by the demands of the woman in childbed. Worried husbands appeared at the doctor's door, insisting upon his immediate presence at the bedside of a wife worn out from a long, debilitating labor. Urgency took precedence. Even though the doctor might have thought a change of clothing judicious, he grabbed his black bag and consoled himself he could, at least, wash up later. His first view of a woman disheartened him. Obviously exhausted, she lay in sweat-stained bed, too enervated to be moved from the smelly sheets. After assessing her condition, the doctor asked for some water with which to wash his hands. A soiled washbasin

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both as [a] male and as [a] professional. . . ." "Introduction: Science, Society and Social Thought," in No Other Gods: On Science and American Social Thought (Baltimore: John Hopkins Press, 1976), p. 14. Psychological needs are, perhaps, an important variable in comprehending a doctor's particular posture on a given issue. Since I find Meigs' anticontagionism perfectly explicable given the epidemiology available to him, the psychological interpretation seems gratuitous. Other anticontagionist statements were made by Dewees, A Treatise, p. 407; J.L. Chandler, "Contagiousness of Puerperal Fever," Boston Med. & Surg. J. 33 (1845-6): 342; John C. Howard, "Formidable Case of Puerperal Fever - Cured," Boston Med. & Surg. J. 5 (1831): 188; "M" derided the "puerperalists." "Puerperal Fever," Memphis Med. Recorder 3 (1855): 279; C.R. Harris "The Epidemic Puerperal Fever of Mount Solon and Vicinity," N.Y. Med. Gazette and J. Health 3 (1852): 237.

was filled promptly with water. Since the labor had been protracted, the doctor elected to assist nature with the forceps he kept in his bag (protected from deleterious miasmatic influences). The delivery accomplished finally, the mother insisted upon a traditional binding of her abdomen. This time-honored ritual put women at risk to disease, and at odds with the physician who valued cleanliness. J. F. G. Holston waged an unsuccessful campaign against the belly bandage with his rural Ohio patients. He thought "scrupulous cleanliness of a person and bed [would] do more to prevent puerperal fever" than all of the lancets and drugs available. He urged the removal of all "impurities. . . before decomposition [made] their presence evident to the nostrils." His respect for an immaculate birth environment was undermined by his patients' demand for a disgusting wrapping which "confined wet and filthy garments to [her] person." They made ineffective any prophylactic results which his own sense of hygiene might have achieved. The imperative of time and traditional folk rituals placed women in harm's way.[30]

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[30]Cora Frear Hawkins gives an account of her father's practice in rural Iowa. Buggies, Blizzards and Babies (Ames: Iowa State University Press, 1971). J.G.F. Holston, "Report of the Committee on Obstetrics," Transactions of the Ohio Medical Society (Sandusky: n.p., 1857), pp. 53-54, 63. Certainly, "patients" have a history of rejecting advice to the detriment of their well-being. Smallpox inoculation is a case in point. Many colonists questioned the practice on religious grounds calling it

Sexual intercourse placed women more immediately in harm's way. Lack of effective contraceptives made pregnancy likely; and women knew disease and often death accompanied them to childbed. Few females reached maturity without having heard of a relative, friend or neighbor struck down by the fever. "In Bath, New Hampshire," for instance, "containing a population of 1500 or 1600," about sixty women died from puerperal during an epidemic.[31] Fear of this

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interference with God's will. John T. Barrett, "The Inoculation Controversy in Puritan New England," Bull. Hist. Med. 12 (1942): 175; John B. Blake, "The Inoculation Controversy in Boston, 1721-1722," New England Quart. 25 (1952): 489-506.

More recently, studies indicate patients fail to follow through on doctors' recommendations. Francis Vida, Barbara M. Korsch, and Marie J. Morris, "Gaps in Doctor-Patient Communication: Patients' Response to Medical Advice," N. E. J. Med. 280 (1969): 535-540; Milton S. Davis, "Physiological, Psychological and Demographic Factors in Patient Compliance with Doctors' Orders," Medical Care 6 (1968): 115-122; W.J. Johannsen, G.A. Hellmuth and T. Sorauf, "On Accepting Medical Recommendations," Arch. Environ. Health 12 (1966): 63-69. This speaks to the "power" of the doctor in the consultative relationship as does the individual's decision to even become a patient of a particular doctor. I.K. Zola, "Pathways to the Doctor: From Person to Patient," Social Science & Med. 7 (1973): 677-689. During an outbreak of puerperal fever in the 1840's, for instance, pregnant women elected to abandon a patient "career" by fleeing from a suspect doctor. Chandler, "Contagiousness of Puerperal Fever," 342; Hugh L. Hodge, On the Non-contagiousness of Puerperal Fever (Philadelphia: Collins, 1852), 31.

[31]Hall and Dexter, "An account of Erysipelatous Fever," 21; George Sickles, "Epidemic Puerperal Fever--Black Tongue--Erysipelas, etc." St. Louis Med. & Surg. J. 7 (1850): 5; William Bowen noted the disease "blasted the hopes and happiness" of many families in a small Ohio town. "Epidemic Puerperal Fever at Millersburgh, Ohio," West. Lancet 2 (1943): 65.

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deadly disease has never been acknowledged as a compelling contributing factor to the well-documented aversion of the "true woman" to sexual intercourse.[32] Her lack of passion was extolled in medical literature as well as in the popular press. The one time Surgeon General of the U. S., William A. Hammond thought females had "far less intensity of sexual desire than do men."[33] While such statements might be interpreted as part of a conspiratorial effort on the part of a male-dominated medical profession to cruelly repress female sexuality,[34] that interpretation cannot explain

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[32]Barbara Welter describes the attributes of the true woman as piety, domesticity, submissiveness and purity. "The Cult of True Womanhood: 1820-1860," Am. Quart. 18 (1966): 151-174.

[33]Sexual Impotence in the Male and Female (Detroit, 1887), pp. 278-301, quoted in Carl Degler, At Odds: Women and the Family in America from the Revolution to the Present (Oxford: Oxford University Press, 1980; Oxford University Press paperback, 1981) p. 256.

[34]Feminist historians suggest male doctors had an ill-hidden enmity toward their female patients which influenced both their advice to and treatment of female patients. Carroll Smith-Rosenberg and Charles E. Rosenberg, "The Female Animal: Medical and Biological Views of Women in Nineteenth-Century America," J. Am. Hist. 60 (1973): 131-154; Ann Douglas Wood, "The Fashionable Diseases: Women's Complaints and Their Treatment in Nineteenth-Century America," J. Interdisc. Hist. 4 (1973): 25-52. For a more balanced interpretation of doctors' medical treatment see Regina Markell Morantz, "The Lady and Her Physician," in Clio's Consciousness Raised: New Perspectives on the History of Women, eds. Mary Hartman and Lois W. Banner (New York: Harper & Row, 1973), pp. 38-53; Regina Markell Morantz and Sue Zschoche, "Professionalism, Feminism and Gender Roles: A Comparative Study of Nineteenth-Century Medical Therapeutics," J. Am. Hist. 67 (1980): 568-588 and my "Equal Treatment for All: American

totally the celebration of female "passionlessness" which women (and men) encouraged.[35] Rather, the denial of passion practiced by many women and commemorated by others coincided with women's own needs and can be viewed as an act of self-preservation. Sex meant pregnancy; pregnancy meant a brush with death. When scarcely a woman escaped puerperal fever, "the consternation it produced in those in childbed, and that [were] enciente," was, a sensitive physician commented, "truly appalling."[36] It is no coincidence that beginning in the 1820s a genre of prescriptive literature appeared promoting female purity. Just as fear of disease today inhibits sexual behavior,[37] fear of disease, particularly the increasingly common puerperal fever, informed women's supposed disinterest in sex.

Contagionists assaulted another basic tenant of

Medical Remedies for Male Sexual Problems, 1850-1900," J. Hist. Med. & Allied Sci. 33 (1977): 55-71.

[35]Nancy F. Cott theorizes women used it to provide them with a moral superiority, moral power, over men. "Passionlessness: An Interpretation of Victorian Sexual Ideology, 1790-1850," Signs 4 (1978): 219-236; Daniel Scott Smith theorizes women used it to establish domestic autonomy. "Family Limitation, Sexual Control and Domestic Feminism in Victorian America," Feminist Studies 1 (1973): 40-57.

[36]Sickles, "Epidemic Puerperal Fever," 1.

[37]Norma Gallagher, "Fever All Through the Night," Mother Jones 7 (1982): 36-43; Lindsy Van Gelder, "Lovesick: The Terrible Curse of Herpes," Rolling Stone issue 364 (1982): 23-24.

contagion; that is, like always produces like. This appeared arbitrary to the contagionists who observed similarities between puerperal fever and erysipelas. They argued a woman's exposure to erysipelas could result in puerperal fever. It is now known that both are the result of streptococcal infection. When doctors knew nothing of the biological origins of disease, they based their diagnoses on observed symptoms and signs. They were remarkably similar among the victims of both disease. Chills, fever and especially, cellulitis, a marked reddish discoloration of cutaneous and subcutaneous tissue (the "beefy" red streaking common to blood poisoning), along with the formation of abscesses and a noticeable stench characterized erysipelas and puerperal fever. Other indicators existed as well for doctors in the mid-nineteenth century. A manual examination of a woman with puerperal disease revealed "the whole of [her] internal parts coming into contact with the [doctor's] finger remarkably hot and swollen"[38] just like the lesions of erysipelas. Too, it had become common knowledge that the "proportion of [puerperal fever] cases is sensibly increased during the epidemic prevalence of erysipelas."[39] Knowledge of

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[38]Sickles, "Epidemic Puerperal Fever," 5.

[39]Hall and Dexter, "Account of Erysipelatous Fever," 19.

concurrent epidemics "in the same locality--the similarity of symptoms, and their commingling in the same subject [suggested] a strong possibility. . . of the sameness of the causes."[40]

Among the suspected causes, contagionists maintained, should be the physician who carried disease-causing miasm from erysipelas patients to women in childbed. This grim reality forced itself upon a rural Pennsylvania practitioner, D. F. Leasure during an unforgettable spring in 1852 when an epidemic of erysipelas in New Castle forever changed his life. Treating patients kept him busy, and one young girl particularly suffered as the disease reduced her to "almost putrid mass." After one of his many visits to her, Leasure went to a woman in labor. The delivery proceeded quite naturally, and he left her side with no premonition of what would follow. Within a day, chills and fever overwhelmed the woman. Three days later, she was dead. Her infant, seemingly healthy at birth died four days later of a malignant erysipelas. Leasure immediately abandoned all of his obstetrical work for fear of becoming "instrumental in communicating the contagion to [other] lying-in patients." His self-exile lasted about three months at which time he agreed to attend another delivery. Again, the labor proceeded without incident; and,

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[40]Sickles, "Epidemic Puerperal Fever," 7.

again, the woman died thirty-six hours later and her infant son was dead days later of malignant erysipelas. Leasure again exiled himself from obstetrics. Then, an urgent call some months later persuaded him to take part in another delivery. Events repeated themselves. When this woman showed signs of a fatal fever, however, desperation forced the doctor to heroic measures. He "determined," he recalled, "to bleed her to death or break down the disease." The disease won. For her death and that of the previous two women, Leasure bore full responsibility. They had died because "during the necessary manipulations. . . [he had] introduced the erysipelatous virus into the vagina" where it "poisoned" their blood. He elected to withdraw permanently from obstetrics.[41]

Contagionists insisted if women left a district "infected" with erysipelas, they remained potential victims of puerperal fever "if during labor [they were] attended by a physician who is engaged in daily practice among individuals affected with erysipelas."[42] The accusation

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[41]D. F. Leasure, "The Erysipelatous Disease of Lying-in Women," Am. J. Med. Sci. 31 (1856): 45-49. Leasure (1819-1886) later went on to distinguish himself as an officer in the Twelfth Pennsylvania Volunteers during the Civil War. Paul E. Steiner, Physician Generals in the Civil War: A Study in Nineteenth Mid-Century American Medicine (Springfield, Ill.: Charles C. Thomas Publisher, 1966) pp. 65-68.

[42]Hall and Dexter, "Account of Erysipelatous Fever," 19-20.

had decided implications for a doctor's survival in a highly competitive profession. The attack on privilege which characterized the Jacksonian period of American history manifested itself in the practice of medicine as well as that of politics. Medical licensing was abolished as a remnant of privilege, and ambitious promoters established a network of proprietary medical schools across the landscape of rural and developing America.[43] There, for a modest fee and little more than three to six months time, the sturdy sons of the era's celebrated common man became diploma-carrying doctors.[44] Those boys competed for patients not only with one another, but with the Thomsonian rural-based practitioners, the homeopaths and their gentle elixirs in the cities, and with any number of traveling nostrum vendors and health food enthusiasts.[45] One way to

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[43]Richard H. Shryock Medical Licensing in America, 1650-1965 (Baltimore: Johns Hopkins Press, 1967), pp. 27-37; Joseph F. Kett, The Formation of the American Medical Association: The Role of Institutions, 1780-1860 (New Haven: Yale University Press, 1968).

[44]J. Marion Sims, eventually an internationally respected gynecological surgeon, recalled upon graduation in 1835 he "knew nothing at all about the practice of medicine." The Story of My Life, ed. H. Marion Sims (New York: D. Appleton & Co., 1886), p. 138. Martin Kaufman, American Medical Education: The Formative Years, 1765-1910 (Westport, Conn.: Greenwood Press, 1976); William F. Norwood, Medical Education in the United States before the Civil War (Philadelphia: University of Pennsylvania Press, 1944; New York: Arno Press, 1971).

[45]Alex Berman, "The Thomsonian Movement and Its Relation to American Pharmacy and Medicine," Bull. Hist.

gain the loyalty of a family was to see a woman safely through childbirth.[46] Given the economic realities of mid-nineteenth century medical practice, the willingness of physicians to discuss their role in the dissemination of puerperal fever remains remarkably candid.

Every claim made by the contagionists could be tested. Their assumed connection between puerperal fever and erysipelas (like their assumption cleanliness would prevent disease) did not hold up against their colleagues' clinical experience. Some doctors, thinking the contagionists might have a point, modified their behavior as an accommodation to the possibility of their acting as an intermediary carrier of miasmatic influences. During the winter of 1848, Ezra Bennett treated numerous patients in his Danbury, Connecticut practice for erysipelas. Cognizant

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Med. 25 (1951): 405-428; 519-538; Marshall Scott Legan, "Hydropathy in America: A Nineteenth Century Panacea," Bull. Hist. Med. 65 (1971): 267-280; Martin Kaufman, Homeopathy in America: The Rise and Fall of a Medical Heresy (Baltimore: Johns Hopkins Press, 1971); William G. Rothstein, American Physicians in the 19th Century: From Sects to Science (Baltimore: Johns Hopkins Press, 1972), especially pp. 125-174; Hugh M. Ayer, "Nineteenth Century Medicine," Indiana Magazine Hist. 48 (1952): 233-254; John Duffy, "American Perceptions of the Medical, Legal and Theological Professions," Bull. Hist. Med. 58 (1984): 1-15; Sylvester Graham thought "he could change the world by getting everyone to eat 'Graham crackers,'" quoted in Allen F. Davis and Harold D. Woodman, eds. 3rd ed. Conflict and Consensus in American History (Lexington, Mass.: D.C. Health, 1972), p. 373.

[46]Donegan, "Man-Midwifery," 98.

of the supposed risk to women in childbed from his exposure to that disease, Bennett "washed [his] whole person with soap and water, then with a solution of chloride of lime, and then with alcohol, changing every article of dress, and putting on clothes which were entirely clean" before going to their bedside. Those extraordinary precautions notwithstanding, he lost ten women in succession to puerperal fever. "I then was satisfied," he reported, "that the disease was not propagated by the hands or clothes of the physician." Bennett blamed the carnage on "a vitiated, miasmatic state of the atmosphere [which] prostrated the vital energies and prevent [ed] healthy reaction" of the women to the rigors of childbirth. He further opined the "only sure preventive. . . is removal from the infected district [as] every woman who went abroad to be confined did well." The doctor remained something of a symbol of professional dedication to the townspeople regardless of the number of women who died while under his care. He had performed in an heroic fashion, going to their bedside while suffering from a painful attack of facial erysipelas which eventually forced him to bed.[47]

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[47]Ezra Bennett, "On the Identity of Erysipelas and a Certain Form of Puerperal Fever and Its Contagiousness," Am. J. Med. Sci. 19 (1850): 376-383.

The contagion theory of puerperal fever, in sum invited disbelief. Advocates waged an ineffective campaign to redefine the established criteria of contagion. Their attempt to convince colleagues that like did not always produce like; that is, exposure to the effluvia of erysipelas produced puerperal fever, did not withstand compelling clinical experience to the contrary. Their attempt to convince colleagues that they carried disease required acceptance of an asymptomatic, intermediate carrier. Again, the unpredictable loss of female life even in a suspect physician's practice undermined the contagionists' claim. They also raised false hopes for cleanliness as a preventive. Doctors, contagionist and anticontagionist alike, went to remarkable lengths to ensure their own hygiene only to be tracked relentlessly by puerperal fever. These accumulating facts persuaded the outspoken Charles Meigs to dismiss that search for a contagion of puerperal fever as idleness, and to decry the image fostered by the contagionist of the doctor as a "poisoner, carrying with him, wherever he goes, a peripatetic doom."[48] Using the available epidemiology, contagionists tried to prove their theory; and, at the same time, that same epidemiology sustained their opponents.

Although contagionists could not convince their

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[48]Meigs, Obstetrics, pp. 630-638.

colleagues of contagiousness of puerperal fever, they did influence the course of American obstetrics in more subtle and positive way. Those doctors who publicly assumed responsibility for the spread of puerperal fever formed a subgroup within the profession. Each time they washed their hands, changed their clothing or refrained from obstetrical practice convinced that they carried the disease from one patient to another, they assaulted established canons. Those isolated, individual actions may not have constituted a "revolution," but contagionists' dogged respect for the communicability of puerperal fever through their own agency appeared as a constant, implicit warning to others their beliefs could be in error, an error potentially fatal to women in childbed.[49]

Walter Channing (1786-1876) who did much to alleviate the suffering of women in childbed by promoting

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[49]Thomas S. Kuhn, The Structure of Scientific Revolutions, 2nd ed. (Chicago: University of Chicago Press, 1970), esp. pp. 64-65. Recognizing themselves as well carriers certainly presented the profession with something of an anomaly. Contagious diseases, according to the prevalent "paradigm," were supposed to spread from a sick person to a well one. It has been theorized that as long as the profession had no concept of a human carrier, contagion remained outside the realm of consideration. Winslow, Conquest of Epidemic Disease, p. 254.

I'm not suggesting the existence of more than a few avowed contagionists. Their number, however small, questions the wisdom of considering the entire profession dull in its perceptions of a dangerous disease and united in its obstinancy against Holmes. Holmes, after all, merely summed up what British and American doctors had been saying about the contagiousness of puerperal fever.

the use of anesthetics expressed his "earnest hope that [doctors] will never seek to diminish the sense of. . . responsibleness, of that duty, which demands of the whole profession, at whatever sacrifice it may be required, to be ready to do all in its power to prevent the communication of so fatal a malady" as puerperal fever.[50] The mandate to see a woman safely through childbirth fell upon all doctors, including anticontagionists. They responded to that challenge. Skeptical of the existence of a contagion, they found the infectious nature of puerperal fever more valid, especially during those times when erysipelas was epidemic. Many anticontagionists shared the concern of the contagionists about becoming "as private pestilence," but they feared spreading the "infection" of puerperal fever.

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[50]Channing, "Contagiousness of Puerperal Fever," 293.

CHAPTER II

ANTICONTAGIONISTS, INFECTION AND THE DOCTOR AS A PRIVATE PESTILENCE

By the middle decades of the nineteenth century, physicians obsessed over their inability to effect any decrease in the ominously persistent threat of puerperal fever to women in childbed. "Few diseases," conceded a midwestern practitioner in 1850, "possess more interest to the physician. . . than puerperal or childbed fever, [an] interest," he went on to say, "which, perhaps, few other diseases can excite."[1] As the primary killer of lying-in

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[1]George Sickles, "Epidemic Puerperal Fever--Black Tongue--Erysipelas, etc.," St. Louis Med. & Surg. J. 7 (1850): 1; J. G. F. Holston, "Report of Committee on Obstetrics," Transactions of the Ohio Medical Society (Sandusky: n.p., 1857), p. 62. This sentiment contrasts directly to John Duffy's assumption "medicine was primarily concerned with the problem of great epidemic diseases." Sword of Pestilence: The New Orleans Yellow Fever Epidemic of 1853 (Baton Rouge: Louisiana State University Press, 1966), p. 12. Doctors may have been distracted from their battle against puerperal fever during a periodic, dramatic epidemic; but, when it disappeared, puerperal fever remained. Richard Shryock comments on the lack of histories on "endemic diseases which, in the long run, were more fatal and perhaps equally significant in their social consequences." "Medical Sources and the Social Historian," in Medicine and Society in American: Historical Essays (Baltimore: Johns Hopkins Press, 1966), p. 278.

women, the disease presented the medical profession with a daily, ongoing challenge to find a preventive. Contagionists inaugurated a campaign for professional hygiene believing unclean doctors spread a contagion of puerperal fever from one woman to another. Anticontagionists, many of whom were disappointed when such cleanliness had not prevented the disease among their patients, discounted the existence of a specific contagion carried by them. They urged the removal of pregnant women from an "infected" area. Neither the mass exodus of expectant females nor their doctors' clean clothes provided a reliable defense against puerperal fever.

Two very real factions emerged to engage in the public debate about the contagiousness of puerperal fever and what constituted responsible preventive behavior, but emphasizing alone that polarization between doctors obscures the pluralistic elements of their profession. Even as anticontagionists hurled studied counterassertions at the contagionists, they could not maintain a united front. As a group, anticontagionists considered the notion of a contagion of puerperal fever a chimera. They cited unending examples of the erratic pattern taken by the disease even among the patients of one doctor, but even that failed to assuage the fear of some anticontagionists that they could spread something capable of causing puerperal fever. The explosive issue of physician-involvement rent the ranks of

the powerful coalition. A subgroup formed to make an uneasy alliance with the contagionists based on the commonly shared assumption of their ability to become a private pestilence. Like the contagionists, these doctors observed the similarities between erysipelas and puerperal fever and their almost simultaneous outbreak in various locales. Doctors acknowledged a potential risk to a maternity patient after she had been exposed to the infection of erysipelas, an infection they believe translated into puerperal fever. When like did not produce, according to mid-nineteenth century epidemiology, the diseases in question were classified as infectious--not contagious. The anticontagionist-carrier believed he carried an infection, and modified his clinical behavior hoping to prevent transporting it. He learned nothing provided real insurance against puerperal fever. Together with the contagionists, this maverick wing of the anticontagionist faction formed the nucleus of an increasing mass of evidence pointing to the permanency of a disease which they could not prevent.

The doctor who thought puerperal fever a non-contagious disease, nevertheless, could consider himself a private pestilence in the lying-in room. J. F. Peebles admitted as much to the readers of the widely circulated American Journal of Medical Sciences in its January, 1846, issue.

Peebles practiced in the small, southern town of Petersburg, Virginia; and, like many doctors in the area, witnessed the effects of a prolonged erysipelas epidemic. The disease appeared in Petersburg among the "poorer classes" first. It eventually invaded "the most populous and best built street," and attacked a businessman "of the first standing" [with] uncommonly severe, troublesome and protracted symptoms. For more than a week, he suffered from a sore throat, headaches and fever. Erysipelas lesions erupted on the eighth day. The severity of the inflammation produced a swelling sufficient to "entirely obliterate" all of his facial features. The disease attacked two women hired as nurses for the merchant; and, Peebles, himself, while treating his bedridden, grotesque patient, became ill from what he called a "poisoned wound" on his hand. He attributed the sickness to "dressing the patient's face when there was an exceedingly slight abrasion on one of [his] fingers." During one of his many visits to the stricken man, Peebles received a call from a female neighbor. She was in the last stages of pregnancy and under the care of a local midwife, but had called Peebles to relieve "some symptoms not immediately connected with her delivery." He arrived at her bedside, examined her even though his hand was still "most painfully swollen," and determined she should "lose blood." After performing the necessary bleeding, he left. The woman delivered the next day without incident. Twenty-

four hours later, though, family members sent urgent word to Peebles requesting his attendance as a "severe rigor" had overwhelmed the new mother. This time, he refused to make the call "in consequence of [his] own illness." He requested a trusted colleague to visit the ailing woman. Dr. Robinson enjoyed the reputation of a most conscientious attendant. "When not convenient to change his clothes, he invariably carefully washed his hands, and securely tucked up his wristbands and cuffs, so as to allow no portion of his dress to come into contact with the sick lady." His fastidiousness did not save the woman's life. She was in her grave five days after having given birth. On the day of her funeral, two females who had cared for the woman during her brief illness contracted erysipelas. The disease also appeared among persons living in a different part of town, but who had visited the woman to offer their congratulations and to view the newborn infant.

Peebles had not been involved directly either in the actual delivery or the postpartum care of the victim, yet he made a remarkable admission. He implicated himself in her untimely death, and traced his culpability to a disastrous logistical miscalculation. He had gone to her "directly after a short walk from the room of a patient confined with a most malignant case of erysipelas, and. . . remained sufficiently long with her to perform bloodletting." In that time, he communicated the "infection" of erysipelas to her.

The effluvia emitted from the merchant's lesions clung to Peebles like some invisible mist. He contaminated the atmosphere of the lying-in room; and, after breathing the polluted air, the expectant woman became ill. This experience, Peebles insisted, did "furnish. . . the strongest proof of the identity of [erysipelas] and puerperal fever." Doctors exposed to the former risked carrying its infection to women in childbed.[2]

After observing the effects of erysipelas on a victim, such concerns became very plausible. It was a particularly horrid disease, occasionally fatal and accompanied occasionally by the most gruesome manifestations. Erysipelas began innocently enough by casting a reddish flush "on the side of the nose." From there it spread quickly "until it had covered just one half of the whole head. . . attacking the other side of the nose and spread in like manner until it had encompassed the whole

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[2]J. F. Peebles, "Facts in Relation to Epidemic Erysipelas as it Prevailed in Petersburg, Virginia during the Winter and Spring, 1844-45," Am. J. Med. Sci. 11 (1846): 23-44.

An outbreak of epidemic proportions of erysipelas began in the 1840's. Madge E. Pickard and R. Carlyle Buley, The Midwest Pioneer: His Ills, Cures and Doctors (New York: Henry Schuman, 1946), p. 12. The increased risk of cross-infection, I believe, contributed to the more common occurrence of puerperal fever. Erysipelas--or the medical treatment received for it--killed William Crawford, one of the presidential candidates in 1824. Robert V. Remini, Martin Van Buren and the Making of the Democratic Party (New York: W.W. Norton & Co., Inc., 1967) p. 43.

head and upper part of the neck." The attendant swelling forced the eyes shut, and thickened the mouth, nose and ears. Then, "blisters [erupted] upon the whole affected surface." Sometimes, tongues turned dark, an effect which prompted the popular diagnosis of erysipelas, "black tongue."[3] When erysipelas was epidemic, the smallest abrasion turned ugly. A "skinned" elbow, a scratch from barbed wire on the forearm or a knife cut on the finger became life-threatening wounds. The site throbbed with pain, became swollen and "a deep erythematous blush" traveled up the wounded limb. "[A]fter the lapse of a few days, one extensive abscess. . . discharge[d] a semi-putrid watery" fluid, "very offensive," as all doctors and their patients knew, "to the smell."[4] The stench permeated everything. Doctors could smell it on their clothing and on their hands after leaving a patient, and this alerted them to the presence of a disease-causing substance on their person.

Charles Knowlton acknowledged responsibility for the death of a pregnant woman by carrying an "infection" from erysipelas to her. A particularly virulent epidemic of

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[3]Sickles, "Epidemic Puerperal Fever," 2.

[4]Charles Hall and George Dexter, "Account of Erysipelatous Fever, as it Appeared in the Northern Section of Vermont and New Hampshire in the Years 1842-3," Am. J. Med. Sci. 7 (1844): 20.

erysipelas had been ravaging the residents of both New Hampshire and Vermont for almost three years when a grim scenario began for Knowlton on a Sunday morning in January, 1844. On that winter morning, he visited a young male named Hutchinson and found him in the first stages of what would become a fatal attack of erysipelas. The doctor observed "a portion of the skin upon [the] forehead. . . slightly elevated [with] a motley-red appearance." The next day, he saw that the redness covered "both cheeks, eyelids and the nose." By Tuesday evening, the disease "extended into the nose and ears [with] large and numerous blisters." Two days later, blisters covered the man's scalp and legs. Friday, Hutchinson died. On the Thursday Knowlton treated the lesions covering the young man's head and legs, he also went to another patient. A woman fearful she might have miscarried, called for the doctor's assistance. Like other physicians, Knowlton relied on his senses--smell, sight, taste and touch--to make a diagnosis. To discover if a miscarriage, indeed, had taken place, he passed "his finger through the mouth" of the uterus. He thought the procedure detected a detached ovum, and explained to his patient the need for bedrest. After assuring her he would return to check on her condition, Knowlton left. He returned the following Monday (Hutchinson had died the previous Friday), and found the woman feverish and trembling with chills. He left some medication for her, and then hurried to other

patients. Upon his return the next evening, the woman had become quite ill and complained of a sore throat. When Knowlton noticed an ominous "swollen" underlip, he took command. First, he "ordered off the stinking sheep's 'inwards' which had been placed upon her abdomen," then he raised a three-inch blister" on the area and covered it with a cloth "wet in the spirits of turpentine." Sensing he was in for a long stay, he sent his horse to the barn and sat down to watch the patient. He did not leave her side for the next two, almost three, days. All of his efforts to relieve the woman's mounting distress proved futile. He watched helplessly as the 30-year old mother of several children sank into a delerium, weakened steadily and died on Friday morning--exactly one week to the day of Hutchinson's death. While watching the woman die, Knowlton contemplated the events leading up to his sad vigil. His recollection distressed him. He did not recall washing his hands after examining Hutchinson on the Thursday he had first seen the pitiful woman before him. On that day, that very afternoon, he had examined her. For that dreadful oversight, Knowlton knew she would die. He had acted as the agent of her doom, "the medium through which an infection was communicated from one patient to another."[5]

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[5]Charles Knowlton, "Erysipelas and Puerperal Fever," Boston Med. & Surg. J. 30 (1844): 89-95.

Charles Knowlton had a longstanding interest in enhancing women's health, and the loss of a young mother was particularly poignant to him. His concern about the effects of mutiple pregnancies on women prompted, in part, the writing of an early contraceptive tract. Almost immediately upon the publication of his Fruits of Philosophy; or the Private Companion of Young Married People in 1832, Knowlton received a fine and a jail sentence. Ninety days of "hard labor" was the price he paid for "immorality." The book went through numerous printings testifying to the void felt by married persons at the time who wanted to limit the size of the family but knew precious little about how to prevent conception beyond sexual abstinence. Knowlton believed fewer children meant healthier children and healthier mothers. To acknowledge his personal guilt in the premature death of a young mother was a grievous burden. Knowlton wrote "if my treatment. . . is criticized at all, let it not be done by the city practitioner [rather] let it be criticized by the country practitioner who. . . knows what it is to reside in a snowy and mountainous region with roads nearly impossible." Trying to get to a sick patient under those conditions, he confessed, "try men's souls."[6]

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[6]Ibid., 89. On Knowlton see Sidney Ditzion, Marriage Morals and Sex in America: A History of Ideas (New York: W. W. Norton & Co., Inc., 1953; expanded paperback ed., 1969) and Wilson Yates, "Birth Control Literature and the Medical Profession in 19th Century America," J. Hist. Med. & Allied Sci. 31 (1976): 45.

When the miasmatic influence, the infection, of erysipelas found its way into the body of a pregnant or parturient female, doctors knew it could produce a disease very similar to but not exactly the same as erysipelas. Their reluctance to consider them the identical disease was based on observation and theory. They considered the timing of the onset of the woman's illness (while in childbed) an important distinction. This fact made the label puerperal fever enduring if not entirely satisfactory to the profession by the 1850's. Although certain diseases were recognized as distinct entities at the time, some variation of fever remained the most available diagnosis. A febrile condition accompanied many ailments, and doctors established order out of the diagnostic chaos by categorizing those ailments according to the course taken by the fever. Hence, one occurring as a sequelae of childbirth continued to be called childbed or puerperal fever even though it lacked precision since "women in childbed [were] liable to any of the recognized fevers."[7]

The theory of predisposition also influenced the choice to maintain a distinction between puerperal fever and erysipelas. The concept of predisposition had links to the

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[7]Sickles, "Epidemic Puerperal Fever," 6. See, too, Phyllis Allen Richmond, "Glossary of Historical Fever Terminology," in Theory and Practice in American Medicine, ed. Gert H. Brieger (New York: Science History Publications, 1976): 105-106.

distant past when Hippocratic writers in the fifth century, B.C. formulated the humoral theory to explain both the seasonal timing of various illnesses as well as individual reactions to unhealthy climatic conditions. The healthy body was thought to contain equal portions of blood, phlegm, black bile and yellow bile. Should one of those four humors increase in volume, the others diminished to the detriment of the person's health. Seasonal variations in temperature triggered an imbalance. A southerly wind, for instance, encouraged an over-production of phlegm which collected in the brain causing "fits." An outbreak of many "different diseases. . . at the same time," on the other hand, suggested individual tendencies to become sick. The ancient writers traced the differences to "regimen [since] all, most, or at least one of the factors in [lifestyle] does not agree with the patient."[8] A person who maintained a healthy regimen protected himself from the ill effects of a changing temperature which had the potential to disturb the equilibrium attained naturally by the humors.

The practitioner of the mid-nineteenth century was modern enough to have discounted the speculative humoral theory, and modern enough to recognize the validity of the more recent theory of predisposition to explain both an

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[8]"Nature of Man," in Hippocratic Writings, ed. G. E. R. Lloyd (London: Penguin Books, Pelican paperbacks, 1978), pp. 266-267.

individual's immunity to as well as his or her susceptibility to certain diseases. Cholera made its way across the Atlantic from Europe to America in 1832, and surprised no physician in New York City when it made its first appearance in the notorious Five Points district. The neighborhood was home to the city's outcasts. The criminal, the poor and the derelict congregated there in filthy, overcrowded subterranean dwellings to the horror of the more upstanding citizenry. Those persons, by their way of life, had prepared themselves to be victims of cholera. When the disease finally invaded the better avenues which aspiring entrepreneurs called home, doctors had an explanation in place. Success-driven males predisposed themselves by sickness by overwork, stress and irregular diet. Any excessive behavior, too much work or sloth, predisposed begger and banker to disease.[9]

Doctors envisioned the pregnant woman as a dichotomized figure. Her pregnancy was considered a natural state, yet the increased incidence of puerperal fever among lying-in women suggested the condition predisposed them to a dangerous disease. Charles Meigs railed against those who would call pregnancy a "pathological state;" while an Ohio doctor thought it ill-advised to consider the woman in

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[9]Charles Rosenberg, The Cholera Years (Chicago: University of Chicago Press, 1962; Phoenix Books, 1974), especially chapter 3, pp. 55-64.

childbed as "sick or diseased or even as a person convalescent from disease." She was, he said, "simply a person [recently] undergone an extraordinary amount of labor of body and mind."[10] Undeniably, though, she was different. Upon conception, "the uterine organs [passed into] a state of excitement."[11] She became petulent, nervous and sickly, distressing aspects of pregnancy which women acknowledged. "You don't know how it is to realize," wrote Elizabeth Cabot in 1858 to her sister, "that from a condition of vigorous health I am suddenly to drop into illness."[12] Initial pains of labor signaled the beginning of an intense, prolonged internal turmoil. It took little imagination to picture the internal rawness effected as a fetus pushed flesh against flesh seeking its release from the womb. Its emerging head stretched the flesh of the vaginal opening to the point of tearing, leaving an open wound. A perfect portal for the reception of miasmatic influences, the invisible infection could attack and most

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[10]Charles Meigs, On the Nature, Signs and Treatment of Childbed Fevers (Philadelphia: Blanchard & Lea, 1854), p. 89; Holton, "Report on Obstetrics," 54.

[11]Sickles, "Epidemic Puerperal Fever," 5.

[12]Quoted in Carl Degler, At Odds: Women and the Family from the Revolution to the Present (Oxford University Press, 1980; Oxford University Press Paperback, 1981), p. 60; and, for similar comments Anne Firor Scott, "Women's Perspective on the Patriarchy," J. Am. Hist. 61 (1974): 52-64.

likely did attack "the tissues. . . directly concerned in the acts of gestation and parturition."[13] Pregnant women, although considered normal in every way, had, by conceiving, normally predisposed themselves to puerperal fever--and not the erysipelas communicated to her--while they lay in childbed.

Contagionists used the doctrine of predisposition hoping to undermine the anticontagionist argument. An "effluvia or morbid secretions from a diseased body constitute[d] contagion," but the contagion did not act uniformly on all women exposed to it because of predisposition. Like could produce like, Charles Kneeland explained in 1846, only when a "similarity of circumstances" existed. Individual women had individualized predispositions which either prepared them for the reception of a contagion or protected her from its effects while in childbed. That fact did not negate the existence of a contagion. To reject the contagiousness of puerperal fever simply because some women (even those under the care of the same doctor) escaped the disease required of puerperal fever to do what no other known disease could do: attack every person exposed to it. Predisposition, being what it was, made such an event unlikely to occur.[14]

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[13]Charles Meigs, Obstetrics: The Science and the Art (Philadelphia: Blanchard & Lea, 1852), p. 622.

[14]Charles Kneeland, "On the Contagiousness of Puerperal Fever," Am. J. Med. Sci. 11 (1846): 48.

The evidence of a connection between erysipelas and puerperal fever, however, sustained belief in their infectious, non-contagious nature. Anticontagionists quickly identified the primary pathogen of each as an atmosphere loaded with miasm. In 1844, spurred by what he called the "very important question" of puerperal fever being caused by a "materies morbi" carried by the doctor, Austin Flint decided to poll his colleagues. He devised a questionnaire, and the Erie County (New York) Medical Society sent it to physicians in and around Buffalo. A disappointing response (only seven forms were returned) did not deter Flint from drawing conclusions which to him were obvious. One physician related a particularly interesting experience. He had assisted in a birth, and the woman took ill almost immediately after. Two female friends came to comfort her, perhaps, applying a cooling cloth to her feverish forehead or removing the stained linen in which she lay. Erysipleas attacked those thoughtful friends. A maid who washed the bedsheets scratched her hand during the performance of that chore; and, within hours, was "seized with inflammation. . . extending [from the wound] to the extremity of the neck. . . and died after a short illness." Those events went far to prove the existence of a "relationship" between erysipelas and puerperal fever; but Flint believed the "most probable" aspect of the relationship was "a common endemic or epidemic cause, rather than to

entertain the idea of [either disease] being produced by a material transmitted through the medical attendant."[15]

Hugh L. Hodge used the occasion of addressing a graduating class of medical students at the University of Pennsylvania in 1852 to express his views on the controversy surrounding puerperal fever. His speech, later published as "On the Non-Contagious Character of Puerperal Fever," represented the wisdom of a doctor who had for more than thirty years been a practicing obstetrician. He immediately zeroed in on the brewing tendency of otherwise reasonable doctors to perceive a direct link between themselves, their exposure to erysipelas and the onset of puerperal fever in women they attended afterwards. He found the assumption specious. How is it he asked "in innumerable cases, as almost any surgeon and accoucheur well knows, no puerperal fever follows when the obstetrician has been daily attendant on erysipelatous patients." Hodge also reminded his audience that the most die-hard contagionists never maintained the reverse to be true; that is, puerperal fever caused erysipelas. Women developed puerperal fever because of their "predisposition" to it, and no amount of ablutions

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[15]Austin Flint, "Report of Cases of Epidemic Fever Occuring at Buffalo, New York," N. Y. J. Med. 5 (1845): 25-41. Flint (1812-1886), wrote a popular medical text which went through a number of editions and taught for numerous years. Norman Shaftel, "Austin Flint, Sr., Educator of Physicians," J. Med. Educ. 35 (1960): 1122-1135.

could combat such an idiosyncracy. In closing, Hodge assuaged any fears the young physicians might have had by encouraging them to "divest [their] minds of the overpowering dread that [they] can ever become, especially to woman under the extremely interesting circumstances of gestation and parturition, the minister of evil."[16]

Although the medical professional could have been content with the epidemiologically sound (and psychologically reassuring)[17] conclusions of reputable physicians such as Austin Flint and Hugh Hodge, many doctors could not so easily rid themselves of the haunting fear of carrying disease to women in childbed after treating patients with erysipelas. They knew erysipelas to be a generalized, diseased condition caused by the reception of a miasmatic influence which poisoned bodily fluids, the visible manifestation of which were multiple pus-filled blisters. Handling of purulent matter had always posed a problem for doctors. "Long since," an Ohio practitioner recorded in 1848, "the profession has been made familiar with the fact that bodies in anatomical rooms frequently pass into a certain state which is capable of imparting itself to the

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[16]Hugh L. Hodge, On the Non-Contagiousness of Puerperal Fever (Philadelphia: Henry C. Lea, 1852).

[17]Charles E. Rosenberg, "Science, Society and Social Thought," in No Other Gods: On Science and American Social Thought (Baltimore: John Hopkins Press, 1976), p. 14.

living body through the medium of the slightest cuts on the hand and of producing the most serious consequences."[18] Doctors contracted erysipelas "by dissection," and medical journals reported the deaths.[19] Experience in the dissecting room confirmed what smallpox inoculation had taught the profession: "disease [could be] excited" in an otherwise healthy body by bringing "certain substances in a state of decomposition" to the surface of an open wound. Since the open wound of childbirth resembled closely "the surface of a stump after amputation," what, if anything, a doctor pondered in 1847, "prevent[ed] disease from being communicated by a process similar to direct inoculation" if a woman's doctor had had his hands in putrescent matter of any sort.[20]

In the April, 1849, issue of the American Journal of the Medical Sciences, alert readers found a brief summation of article which appeared in the London Medical Gazette some six months earlier. It introduced to American

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[18]Dr. Dawson, "Remarks on Puerperal Fever," in Proceedings of the Ohio Medical Convention (Columbus: S. Medary, 1847), p. 24.

[19]Hall and Dexter, "Account of Erysipelatous Fever," p. 23.

[20]Dawson, "Remarks on Puerperal Fever," 24-26.

readers the name of Ignaz Semmelweis (1818-1865) and his etiological theory of puerperal fever as well as a description of the preventive measures he inaugurated at a far-away maternity hospital in Vienna to control intransigent epidemics. Observation of the disease pattern led Semmelweis to suspect the manual transmission of a "cadaverous poison" by medical students who left the dissecting room and went directly to the bedside of a woman in labor. He singled out the peripetetic students as carrier-culprits since puerperal fever occurred significantly more often in the private ward where the future obstetricians received their clinical education than it did in the two other maternity wards where midwives delivered babies. Semmelweis traced the difference to the fact that students performed autopsies, and must have inoculated decomposing matter into the lacerated flesh of women in childbed with unclean hands. No member of the staff routinely washed his hands before examining women in labor. A noticeable smell of putrescence remained even on washed hands; and Semmelweis, in the spring of 1847, replaced the occasional dip into soap and water with a required washing in chlorinated water after leaving the cadaver and before setting foot in the maternity ward. It worked. The smell dissipated, puerperal fever became less common among women examined by washed hands, and Semmelweis concluded that inoculated poisonous matter derived from a

corpse caused the disease. For this, he has earned an honored place in the pantheon of so-called "great doctors."[21]

The modern accord given to Semmelweis is in poignant contrast to the reception given his theory by contemporaries. Promising results for the eradication of puerperal fever by washing their hands in chlorinated water notwithstanding, doctors did not seize upon the practice. In countless retellings of this episode in the history of puerperal fever a single leitmotif runs throughout: a profession united in its denunciation of a theory which implicated doctors in such a direct, intimate way with a plague of lying-in women. "The medical world of Semmelweis' day," it has been reiterated most recently, "was not ready to accept contamination of the accoucheur's hands as the source of puerperal fever."[22] That longstanding inter-

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[21]C.H.F. Routh, "Notes on the Lying-in Hospital in Vienna" Am. J. Med. Sci. (1849): 510 and "Skoda on the Causes of Puerperal Fever--Experiments on Animals," Am. J. Med. Sci. 20 (1850): 529-532. Ignaz Semmelweis, The Etiology, Concept and Prophylaxis of Childbed Fever, trans. and ed. K. Codell Carter (Madison: University of Wisconsin Press, 1983; originally published, 1860), pp. 89-92. Henry E. Sigerist, The Great Doctors (New York: W.W. Norton & Co., Inc., 1933; Garden City, New York: Doubleday Anchor Books, 1958), pp. 338-343.

[22]Owen H. Wangensteen, "Nineteenth Century Wound Management of the Parturient Uterus and Compound Fracture: The Semmelweis-Lister Priority Controversy," Bull. N. Y. Acad. Med. 46 (1970): 583; and, for a sampling of what is conventional wisdom on Semmelweis' work Stephen D. Elek, "Semmelweis and the Oath of Hippocrates," Proceed. Royal

pretation has bequeathed a questionable vision of the mid-nineteenth century medical profession; and encourages other historians, particularly those reconstructing women's past, to mimic its condemnation of doctors who failed to respect the wisdom of Semmelweis. It has been replayed lately in the accusation that doctors knew how to prevent puerperal fever and so save the lives of numerous women but considered themselves "too busy" to wash their hands.[23]

Doctors failed to act on Semmelweis' preventive recommendation and rejected his etiology of puerperal fever for a number of sound reasons. Puerperal fever could not be blamed on the single pathogen of cadaveric poison. By the time Semmelweis made his discovery, American physicians had

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Soc. Med. 59 (1966): 352; Erwin H. Ackerknecht, A Short History of Medicine (New York: Ronald Press Co., 1955), pp. 174-175; J. J. Nierstrasz, "General Pathology and Therapy of Inflammations in the 1860's," Janus 59 (1967): 170; John Stallworthy, "Puerperal Sepsis, 1800-1957," South. African Med. J. 31 (1957): 833. For the popularized perception of the doctor see Frank G. Slaughter, Semmelweis: The Conqueror of Childbed Fever (New York: Collier Books, 1961) and T. E. Kalem, "Dirty Hands," Time June 1981, p. 60 which reviews a theatre production of Semmelweis by Howard Sackler. Kalem concludes "a man who defies the norm. . . may well be crushed by society's iron fist." Frank J. Murphy remains the standard bibliographic essay. "Ignaz Phillip Semmelweis (1818-65): An Annototed Bibliography." Bull. Hist. Med. 20 (1946): 653-707, 688-707.

[23]The feminist interpretation of doctors' reactions to Semmelweis is aptly spelled out by Patricia Branca, Silent Sisterhood: Middle Class Women in the Victorian Home (Pittsburgh: Carnegie Mellon University Press, 1976), pp. 86-89.

already tried to prevent puerperal fever by either voluntarily removing themselves from the dissecting room or washing their hands if they did dissection. As contagionist and anticontagionist alike learned, those precautions did not prevent the disease. Further, social and professional considerations mitigated against many doctors having access to a cadaver. Such activity presented them with a public relations problem "on account of insuperable prejudice. . . against [those] examinations."[24] Few rural based practitioners had the inclination to transgress the standards of the community in which they made their living. And, if they were to make a living in a highly competitive profession, their time was better spent taking care of living.[25] The risk to their own health which conducting an autopsy presented to doctors also made them reluctant to pursue inquiries on the dead. Tracing the cause of puerperal fever to the manual inoculation of a cadaveric poison into women's bodies reflected the experience of Semmelweis. It did not reflect the experience of doctors who had neither the time, the sanction of their community

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[24]Sickles, "Epidemic Puerperal Fever," 6; Few historians recognize "to be involved in autopsies was an aspect of city and not country medical practice". Dorothy Lansing, Robert W. Penman and Dorland Davis, "Puerperal Fever and the Group B Hemolytic Streptococcus," Bull. Hist.Med. 57 (1983): 74.

[25]Hall and Dexter, "Account of Erysipelatous Fever," 21.

nor the resources to engage in any kind of post-mortem inspection of the dead yet lost women to puerperal fever.

Emphasizing a cadaveric poison as the sole cause of puerperal fever to the exclusion of other pathogens ignored the already substantial body of evidence being accumulated on the connection between it and erysipelas. Doctors all over the country reported an increase of disease among lying-in women when erysipelas was epidemic. In some small towns outside of St. Louis, for example, puerperal fever "made its appearance simultaneously, or perhaps a little subsequently, to the appearance of erysipelas."[26] In other areas, physicians noted the "tendency among women to disease, while in the puerperal state, [during] the prevalence of epidemic erysipelas."[27] When autopsies had been performed on a victim of puerperal fever, the findings, ironically enough, revealed an "erysipelatous inflammation" of the organs which corroborated yet another similarity between the two diseases.[28]

There was historical precedent for the use of chlorine when Semmelweis chose it to rid students' hands of the suspect cadaveric poison. Beginning in the eighteenth

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[26]Sickles, "Epidemic Puerperal Fever," 2.

[27]Dawson, "Remarks on Puerperal Fever," 18.

[28]John C. Douglas, "Report on Puerperal Fever in Answer to Queries from the General Board of Health," Am. Med. Record. 6 (1823): 744.

century, chemicals with a particularly pungent odor had enjoyed a certain vogue as a weapon against the evils caused by noisome smells accompanying putrefraction. They were valued for their deodorizing qualities, and their popularity rested on the shared assumption that "while the odor remains, there must remain also the matter that produces it."[29] Vaporized hydrochloric acid, for instance, was touted for "arresting the progress of contagion."[30] By the end of the eighteenth century and the beginning decades of the nineteenth century, doctors used similar fumigants to counteract the putrid atmosphere thought responsible for rampant epidemics of puerperal fever, erysipelas and gangrene in hospitals. When erysipelas invaded the Massachusetts General Hospital in 1826, informed preventive measures included the burning of sulfur and chlorine gas.[31] In 1846, a professor in the Medical Department of

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[29]Dawson, "Remarks on Puerperal Fever," 25; and Owsei Temkin, "An Historical Analysis of the Concept of Infection," in The Double Face of Janus (Baltimore: John Hopkins University Press, 1977), especially p. 462; John Blake, Public Health in the Town of Boston, 1630-1822 (Cambridge: Harvard University Press, 1959), p. 12.

[30]Winslow, Conquest of Epidemic Disease, pp. 239-241.

[31]Leonard K. Eaton, New England Hospitals, 1790-1833 (Ann Arbor: University Michigan Press, 1957), pp. 176-177; A. Scott Earle, "The Germ Theory in America: Antisepsis and Asepsis (1867-1900)," Surgery 65 (1969): 510-511; and, in other hospitals, Hugh L. Hodge, "Cases and Observations regarding Puerperal Fever as it Prevailed in the Pennsylvania Hospital in February and March, 1833,"

Transylvania University campaigned for a liberal use of fumigants in the event of an epidemic. According to Thomas Mitchell, "no articles promise so much for the correction and oblivion of an infected atmosphere as the chlorides of lime and soda."[32] They destroyed the offensive odor and, therefore, must have destroyed the noxious miasmatic influences causing disease.

By the time chlorine washings had been instituted by Semmelweis at the maternity hospital in Vienna, doctors had become familiar with some salutary effects of the use of chemicals. By the time Semmelweis' book was published in 1860, doctors had become familiar with the unrealiability of chemicals such as chlorine and chloride of lime as a reliable preventive of any disease. Mitchell, the medical school instructor and an anticontagionist, had, as early as 1846, vowed never to attend a woman in childbed "unless [his] pockets were well laden with fresh, concentrated chloride of lime and. . . seen to it that the air of the sick room was charged with chlorine."[33] Encouraged by the

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Am.J. Med. Sci. 12 (1833): 328-329; D. Meredith Reese, "Notes on Hospital Practice at Bellvue, New York," Am. J. Med. Sci. 19 (1850): 99.

[32]Thomas D. Mitchell, "Practical Remarks on Contagion and Infection," West. Lancet 5 (1846): 6; A. P. Dutcher, "On the connection between Puerperal Peritonitis and Erysipelas," Am. J. Med. Sci. 31 (1856): 100.

[33]Mitchell, "Practical Remarks," 6.

prospect of preventing puerperal fever, that "formidable disease [which] brought grief and sorrow into many a happy family,"[34] some doctors took extreme care to rid themselves of the smell of potential infection. They took baths, changed their clothing and washed their hands. Hygenic precautions which, anticontagionists had reason to point out, had failed to prevent the disease became convincing evidence of its non-contagious nature. In 1850, Ezra Bennett had "satisfied" himself that puerperal fever "was not propagated by the hands or clothes of the physician" after he, among other things, had washed his "whole person with soap and water, then with a solution of chloride of lime and then with alcohol" and then lost three women in childbed.[35] Bennett's routine--and any variation thereof practiced by any other doctor--could not have saved the lives of many women. A full body bath in chlorinated water had no effect on the vaginal flora which became pathogenic when tissue was lacerated during childbirth, and neither did it combat the doctor's sore throat or that of the mother's children. However, in the mid-nineteenth century, doctors only knew that their preventive techniques

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[34]Holston, "Report of Committee on Obstetrics," p. 62.

[35]Ezra Bennett, "On the Identity of Erysipelas and a Certain Form of Puerperal Fever and its Contagiousness," Am. J. Med. Sci. 19 (1850): 382.

simply did not work. Any suggestion that a simple handwashing in chlorinated water would work where complicated routines had failed did not encourage a large following.[36]

Semmelweis failed to win over many converts to his initial theory that cadaveric poison inoculated into the bodies of women in childbed alone caused puerperal fever; and, he, too, later decided it excluded other obvious sources of putrescent matter. Semmelweis did add to the ranks of those anticontagionists who thought themselves responsible for the disease. He denied the contagiousness of puerperal fever while insisting upon its communicability through manual inoculation of decomposing matter. He defended his anticontagionism by invoking time-honored epidemiological principles. "A contagious disease is one that produced the contagion by which the disease is spread. This contagion," he continued, "brings about only the same disease in other individuals. Smallpox is a contagious disease because smallpox generates the contagion that causes

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[36]I, therefore, find myself in total disagreement with conventional wisdom regarding the reaction of the medical profession to Semmelweis since my doctors did not believe he "solved the problem of how to prevent puerperal fever." The Scientific Revolution in Victorian Medicine (New York: Holmes & Meier Publishers, Inc., 1979), p. 132. And, I believe further that some doctors were prepared to accept the presence of a disease-causing substance on their hands. When washing their hands proved to no avail, they looked for another source of puerperal fever.

smallpox in others." Accepting the premise that only when like produced like was contagion possible, Semmelweis could not understand those doctors who insisted upon the contagious nature of puerperal fever. In contrast to, say, smallpox, puerperal fever could "be caused in healthy patients through other diseases [such as] a discharging medullary carcinoma of the uterus, by exhalations from a carious knee and by cadaverous particles from heterogeneous corpses." "Childbed fever," he concluded, was "not a contagious disease, but it can be conveyed from diseased to healthy patients by decaying animal-organic matter."[37] The physician acted as the deadly intermediary if the evidence of that stuff, the smell, remained on his hands. He remained wedded to the belief chlorine would banish puerperal fever, even though others found the chemical less than promising as a panacea against a protean, non-contagious disease which, they agreed with Semmelweis, doctors carried to women in childbed.

It became increasingly apparent to doctors that no reliable preventive existed with which to banish puerperal fever at the same time they realized their treatment of puerperal fever failed to prevent its usual grievous

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[37]Semmelweis, Childbed Fever, p. 117.

termination. "I believe," George Sickles, a St. Louis physician, admitted in 1850, "this disease, in its worst form, incurable."[38] Doctors had disagreed about the proper treatment of puerperal fever for most of the century; and by mid-century, the issue centered around the question of "to bleed or not to bleed."[39] While bloodletting was considered the "sheet anchor"[40] by some of the profession, others voiced opposition to any tendency to rely on it "as the sole remedy."[41] The intensity with which opponents defended their therapy of choice reflected the confounding manner in which puerperal fever manifested itself. Sometimes it appeared as a mild, though admittedly dangerous, febrile condition which resembled typhoid with its primary symptoms of chilling and prostration. In those instances, doctors would have been remiss in their duty had they let blood, an operation guaranteed to further weaken an already

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[38]Sickles, "Epidemic Puerperal Fever," 5.

[39]Hall and Dexter, "Account of Erysipelatous Fever," 23.

[40]S. H. Dean, "An Essay on Childbed Fever, Read before the Medical Association of the State of Georgia," Atlanta Med. & Surg. J. 4 (1859): 722; Holston, "Report of Committee on Obstetrics," 63; Charles D. Meigs, "Letter to Editor," Med. Examiner 6 (1843): 3; J.L. Chandler, "Contagiousness of Puerperal Fever," Boston Med. & Surg. J. 33 (1845-46): 342.

[41]D. F. Condie, review of The History, Pathology and Treatment of Puerperal Fever and Crural Phlebitis by Charles D. Meigs in Am. J. Med. Sci. 4 (1842): 399.

sinking woman. They adopted a more moderate therapeutic program of applying mercury-based ointments to the stomach and inner legs.[42] At other times, puerperal fever assumed all of the symptomatic characteristics of an acute inflammatory disease. When it did, doctors let extraordinary amounts of blood. Recovery was attributed in one case to the loss of "ninety-six ounces of blood within four days."[43] Charles Meigs campaigned for a liberal use of the lancet in his war against puerperal fever, and ridiculed those relying on only "a feeble and timid employment of [venesection]."[44] Even Meigs, however, had to concede in 1852 the division which existed in the profession over the issue of treatment.[45] Among its incalculable victims, the disease took different courses each defiant of medical intervention. The day-to-day effect of watching women succumb to puerperal fever took its toll on a physician who

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[42]Charles Severn, "Remarks on Puerperal Fever," Boston Med. & Surg. J. 5 (1831): 157; John C. Howard, "Formidable Case of Puerperal Fever--Cured," Boston Med. & Surg. J. 5 (1831): 188; Phillip A. Davenport, "An Essay on Puerperal Fever," N.Y. J. Med. & Surg. 4 (1841): 328; D. F. Leasure, "The Erysipelatous Disease of Lying-in Women," Am. J. Med. Sci. 31 (1856): 48-49.

[43]Chandler, "Contagiousness of Puerperal Fever," 342.

[44]The History, Pathology and Treatment of Puerperal Fever, and Crural Phlebitis (Philadelphia: Ed. Barrington and Geo. D. Hoswell, 1842), p. 16.

[45]Meigs, Obstetrics, p. 645.

confessed "when our prescriptions are as impotent to save as our tears, then. . . our professional pride is humbled, and our sympathies as men are most painfully taxed."[46]

The majority wing of the anticontagionists, in the meantime, had not kept their silence. They found an articulate spokesman in the person of Dr. Z. Pitcher who responded thoughtfully to the inoculation issue. Pitcher had engaged in general practice in the Detroit area for almost twenty years before he witnessed an epidemic of puerperal fever. In 1841, after erysipelas broke out among the troops of the United States Army garrisoned in the city, women in childbed were victimized by their own special disease. Thereafter, erysipelas, puerperal fever, "inflammatory croup, ulcerous sore throat, metroperitonitis" and numerous others disease never entirely absented themselves especially during winter months. Puerperal fever attacked numerous women beginning in the fall of 1854, and Pitcher described some of those cases which he felt sufficient to make his point. A chill took hold of one woman some two weeks before her expected time of confinement, and went into somewhat premature labor. The child arrived quickly, before the doctor made his appearance. It died of erysipelas while examination

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[46]William Bowen, "Epidemic Puerperal Fever at Millersburgh, Ohio," West Lancet 2 (1843): 63-66.

revealed "two lumbar abscesses" in the mother. Erysipelas attacked another pregnant woman. Starting on her ankle, it traveled quickly up to her knee and "was suppurating freely at the time of her confinement." She delivered after a hard labor; and, three weeks later when her leg was healed, she sickened with symptoms of a mild typhoid which resembled exactly the illness of her children some weeks before. Finally, he noted the woman he had attended just after leaving the hospital where he treated cases of typhoid, "malignant erysipleas and from fifteen to twenty cases of smallpox, two of which were complicated with erysipleas." He went to the woman in labor "without making any special ablutions, or changes of rainment, except [his] outside coat which [he] kept buttoned closely whilst in the pest house so as not to carry from thence the atmosphere of the rooms between [the] garments." The delivery proved difficult and required the use of forceps and, later, the manual removal of the placenta. Mother and child did fine. Pitcher believed his recitation revealed an "element of unity" among the examples he cited, and that unifying principle was the existence of an epidemical atmosphere. He challenged the profession to consider "why. . . astute, learned and practical men become oblivious to that fact which sufficiently explains the reason of its ability to augment the number of its victims, and look, instead, to the agency of a contagion or rather a virus." The possibility of

doctors communicating so many cases of puerperal fever "by the touch of a person in perfect health who has had no communication with the disease for days and perhaps weeks," struck Pitcher about as likely "that the royal touch should heal scrofula."[47]

A response from one of those learned men appeared quickly. The April, 1855, issue of the American Journal of the Medical Sciences published a review of Pitcher's essay written by D. F. Condie. It signified an emerging trend of thought within the medical profession. Puerperal fever, Condie argued, was transferrable "not only by contagion, in the proper sense of the term. . . but also by direct inoculation by the hands of the accoucheur introducing into the vagina or uterus a virus derived from the bodies of those who have died of peritonitis, or phlebitis, or, probably from the diseased secretions of the vagina in certain cases of childbed fever." The responsibility of the physician was clear. He risked propagating the disease by "contagion [or] communicat[ing] it by inoculation" after treating entirely other diseases. Condie did not specifically mention the risks attendant to treating patients with erysipelas, but all knew they existed.[48]

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[47]Z. Pitcher, "On the Induction of Puerperal Fever by Inoculation (so-called)," Peninsular J. Med. & Coll. Sci. 2 (1855): 337-354.

[48]D. F. Condie, review of On the Induction of Puerperal Fever by Inoculation, so called by Z. Pitcher in Am. J. Med. Sci. 29 (1855): 462-464.

There it was. The profession recognized a multiplicity of causes of what was rapidly becoming an endemic disease of women of childbed at a time when a reliable preventive eluded them. The contagionists and those anticontagionists convinced of the pivotal role of doctors in the persistent threat of puerperal fever had succeeded in making their colleagues consider the reality of that possibility. The debate over the contagiousness of the disease lost some momentum as the suspicion grew that "the communicability of puerperal fever, whether by miasmatic infection or contagion [was] of less importance than the fact it can be conveyed by the physician."[49] The redoubtable anticontagionist, Charles Meigs symbolized changing sentiment when he declared to the profession its obligation. Regardless "whether [a doctor] may believe in the contagiousness or not of a malady, [he must] avoid, as far as it may be in [his] power, all occasion to transmit, if it can be transmitted, an epidemical or endemic disorder" such as puerperal fever.[50] By recognizing the communicability of puerperal fever by whatever means, by infection, by contagion or by inoculation, doctors in private, general practice confirmed what hospital staffs knew: puerperal fever appeared at will.

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[49]Alonzo Clark[?], Discussion at a meeting of the New York Academy of Medicine, N.Y. J. Med. 2 (1857): 370; C. Rynd, "Puerperal Fever and Erysipelas," Peninsular & Independent Med. J. 2 (1860): 647-648.

[50]J. Wistar Meigs, "Puerperal Fever and Nineteenth-Century Contagionism: The Obstetrician's Dilemma," Trans. Coll. Phys. Phila. 42 (1975): 274.

CHAPTER III

THE MIASMATIC THEORY OF PUERPERAL FEVER IN AMERICA'S EARLY HOSPITALS

During the first half of the nineteenth century, individual doctors isolated from one another by geographical distance and separated by their conflicting opinions about the contagiousness of puerperal fever came to the bitter realization, by virtue of their shared role as private practitioners, they abetted the spread of that potentially fatal disease to women in childbed. This piecemeal awakening to their carrier-role proved eventually sufficiently compelling for those doctors to publicize through the pages of various medical journals to other colleagues the urgent fear that they, too, were potential carriers. Self-acknowledged carriers took on that dreadful burden even though the imperative of a predominant epidemiology provided them with an alternative, impersonal explanation for an epidemic of puerperal fever. That science, predicated on the existence of pervasive, invisible miasmatic influences in the atmosphere which could cause disease, retained its currency, at the same time, for doctors attached to urban hospitals. They remained

skeptical of an explanation for the disease which rested on the personal responsibility of the doctor. Their experience with puerperal fever differed significantly from that of the private practitioner. During an epidemic outbreak of the disease in a crowded hospital, it was simply impossible to trace each case to any individual doctor. The nascent campaign for recognition of the doctor as a carrier of puerperal fever initiated by an unorganized band of private practitioners faltered outside of hospital doors.

In other respects, the combined though qualitatively different experiences of mainly rural private doctors and those on staff of various urban hospitals led to a mutual agreement about the communicability of puerperal fever. Hospitals revealed the disease spread by both contagion and infection once it had been spawned by a dangerous in-house effluvia. When, for instance, erysipelas appeared in the surgical ward doctors learned to expect puerperal fever would surely erupt in the lying-in ward. One day a woman was fine; the next, dying. From her, the disease traveled rapidly from patient to patient until it had victimized every woman in the department. Whether puerperal fever spread by a miasmatic, nonspecific, infection from erysipelas or from a miasmatic, specific contagion from puerperal fever became less an issue as doctors in hospitals, like their counterparts across the county in solo practice, conceded the communicability of the disease.

United in their quest to banish for women the disease which promised to make "the process of child-bearing. . . a source of great dread and terror,"[1] doctors devised preventive measures. The practices were based on their acceptance of a shared epidemiology, but were modified by idiosyncratic clinical experience. For doctors in solo practice, prevention took on a personal meaning. They washed themselves, and changed their clothing. In contrast to the doctor in the hospital, they performed those acts more or less before the fact. After handling the patient with erysipelas, the women with puerperal fever or a cadaver, the convinced carrier did what he felt prudent before going to a woman in childbed. In hospitals, inanimate objects contaminated by miasm--beds, chairs, linen, floors, walls--were the targets for scrubbing and fumigating, not the physician. Those attempts at cleanliness went into effect, for the most part, after an epidemic was underway and sometimes not until after wards had been vacated or the hospital shut down. The decision to send away pregnant and parturient women already settled in for care represented the last feeble line of defense against puerperal fever. Often, on the reopening of a thoroughly fumigated, clean ward, the disease promptly reappeared.

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[1]Dr. Dawson, "Remarks on Puerperal Fever," Proceedings of the Ohio Medical Convention (Columbus: S. Medary, 1847): p. 21.

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Hospitals, like private practice, provided doctors with ample opportunity to witness the intransigence of puerperal fever. No reliable preventive presented itself. By the 1860s, on that the American medical profession could agree.

The use of hospitals would be integrated slowly and not without professional conflict into American medical practice. In the mid-eighteenth century, the confluence of large-scale social and economic developments along with the particularistic needs of a profession struggling to gain a foothold in a swiftly changing society eventually created a climate favorable to the initial construction of hospitals.

Both almshouses and hospitals dotted the landscape of what can be called loosely America's urban areas by the end of the eighteenth century. For the most part they represented a civic and governmental response to the needs of an increasing number of victims displaced by an economy in the first stages of changing from a subsistence to a market emphasis. In the town of Dedham, Massachusetts, land worn out by excessive cultivation no longer supported the basic needs of some families, and many unmarried men had no land at all. Their accumulation as a dependent class led to

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the construction of a poor house in Dedham in 1771.[2] The pauper population was living testimony to what has been described as "a significant decline in the American standard of living in the period between 1718 and 1748."[3] This economic dislocation made itself felt in commercial centers where many inhabitants had no property, no prospect of owning any and "except for public aid, without the means of obtaining necessities of life."[4] Desperate persons congregated in nascent ghettoes as wages failed to keep pace with inflated prices for food and shelter, and the first public almshouse appeared in Philadelphia in 1732.[5] Sickness and disease went hand-in-hand with overcrowding, malnutrition and despair, and governmental bodies approved

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[2]Kenneth Lockridge, A New England Town: The First Hundred Years. (New York: W. W. Norton & Co., Inc., 1970), especially chapter 8. The specter of pauperism led to civil disorder according to Edward Countryman. "'Out of the Bounds of the Law:' Northern Land Rioters in the Eighteenth Century," in The American Revolution, ed. Alfred E. Young (DeKalb: Northern Illinois University Press, 1976): 37-69.

[3]James A. Henretta, The Evolution of American Society, 1700-1815 (Lexington, Mass.: D.C. Heath & Co., 1973), p. 41.

[4]Gary B. Nash, "Social Change and the Growth of Prerevolutionary Urban Radicalism," in The American Revolution, ed. Alfred E. Young (DeKalb: Northern Illinois University Press, 1976): 9.

[5]Gary B. Nash, "Up from the Botton in Franklin's Philadelphia," Past and Present 77 (1977): 57-83; Gary B. Nash, "Poverty and Poor Relief in Prerevolutionary Philadelphia," Wm. & Mary Quart. 33 (1976): 3-30.

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funding for public hospitals. The Pennsylvania Hospital, actually a rehabilitated house, opened in 1752 and remained the major institution of its type until after the Revolution. The New York Hospital received patients in 1821.[6] The social need for hospitals was generally unquestioned. The sick and ailing poor needed medical care.

Poverty, of course, had no respect for gender. Women suffered its effects as wives of displaced farmers and unemployed mechanics and as the residue of war, the widow--all with children to protect and feed. Unskilled, single women unable to provide for themselves also swelled the ranks of the female poor.[7] Their need for medical care was apparent; however, it was by no means as clear to the medical profession that the pregnant pauper belonged properly in a hospital. When the Pennsylvania state assembly responded to the obvious needs of a burgeoning population of pregnant, poor women in Philadelphia by approving the establishment of a maternity service at the Pennsylvania Hospital in 1793, the decision made doctors uneasy. They believed it improper, "indelicate," for men to

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[6]William H. Williams, "Independence and Early American Hospitals, 1751-1812," J.A.M.A. 236 (1976): 36-38.

[7]Mary P. Ryan, Womanhood in America (New York: Franklin Watts, Inc., 1975), pp. 100-101; Douglas Lamar Jones, "The Strolling Poor: Transiency in Eighteenth-Century Massachusetts," J. Social History 7 (1975): 28-55.

participate in childbirth. Those gentlemanly attitudes together with funding difficulties prevented the opening of the service until 1803.[8] A similar reluctance among doctors to attend childbirth can be discerned at the Bellevue Hospital in New York City where in 1817 an on-call midwife performed those duties.[9]

The reticence of urban, professional men to attend the birth of an impoverished woman's child reflected the power of tradition. There was a longstanding cultural prohibition against the presence of men in lying-in rooms. The doctors, in other words, would have considered it indelicate for them to be present at any birth. Just as hunting and plowing were ordained as men's work and the forest and the field their purview, childbirth was woman's work and the room where it took place her territory. There is no reason to assume women wanted it any other way. It offered them, in fact, an opportunity to celebrate female separatism, to gloat about their unique knowledge of the mysterious process of childbirth. In this one area of their lives, they exercised complete authority over men. The

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[8]William H. Williams, America's First Hospital: The Pennsylvania Hospital, 1751-1841 (Wayne, Pa.: Haverford House, 1976), pp. 130-131; Leonard K. Eaton, New England Hospitals, 1790-1833 (Ann Arbor: University of Michigan Press, 1957), p. 168.

[9]Raymond A. Mohl, Poverty in New York, 1783-1825 (New York: Oxford University Press, 1971), pp. 96-98.

inquisitive male intruder was quickly shooed away by women flapping their aprons at him and the sound of their clucking tongues echoing in his ears. The gathering took on the appearance of a social occasion. The women shared food, drink and, perhaps, recollections of their own time in childbed. Then, as the woman's contractions grew stronger and her discomfort increased over the passing hours, many of her supportive sisters may have begun a silent prayer for her safe deliverance since they all knew childbirth to be treacherous business. The reality of a macabre outcome of pregnancy made itself felt among women in all of the colonial settlements. Women in New England, for example, made ready for the day by ruminating on their possible death, while in the tidewater area of Virginia, an "exaggerated maternal mortality" reflected the "hazard of marriage" for woman.[10] Neither the combined folk wisdom

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[10]Catherine M. Scholton recreates an early birth setting. "'On the Importance of the Obstetrik Art': Changing Customs of Childbirth in America, 1760-1825," Wm. & Mary Quart. 34 (1977): 432; Laurel Thatcher Ulrich, "Vertuous Women Found: New England Ministerial Literature, 1668-1735," in A Heritage of Her Own, eds. Nancy F. Cott and Elizabeth H. Pleck (New York: Simon & Schuster, 1979; Touchstone Book, 1979), p. 67; Philip J. Greven, Jr. Four Generations: Population, Land and Family in Colonial Andover, Massachusetts (Ithaca: Cornell University Press, 1970; Cornell Paperbacks, 1972), pp. 27-28; Lois Green Carr and Lorena S. Walsh, "The Planter's Wife: The Experience of White Women in Seventeenth-Century Maryland," in A Heritage of Her Own, eds. Nancy F. Cott and Elizabeth H. Pleck (New York: Simon and Schuster, 1979, Touchstone Book, 1979), pp.33-34; Darrett B. Rutman and Anita H. Rutman, "Of Agues and Fevers: Malaria in the Early Chesapeake," Wm. & Mary Quart. 33 (1976): 52.

of women, the radiating warmth of female bonds nor the skilled midwife proved sufficient to prevent completely the loss of a sister in childbed.

The growing doubt of midwives' ability to provide the best possible care first spawned the interest of eighteenth-century urban physicians in midwifery. In 1765, William Shippen, Jr. (1736-1808) reported "several desperate cases in different neighborhoods which had proved fatal to the mothers as to the infants." Shippen and those who followed him into a formerly alien territory did not wish to conquer midwives, but, rather, to educate them. Shippen, gave free lectures to midwives in the Philadelphia area.[11] Meanwhile, in New York City, Valentine Seaman (1770-1817) gave lectures at the Alms House for midwives, and eventually put together a small book on the mechanisms of birth for them.[12] Samuel Bard (1742-1821) published his Compendium of the Theory and Practice in 1807, for midwives. Ten years later, an expanded, revised version of the treatise

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[11]Pennsylvania Gazette January, 1765, quoted in Lawrence Longo, "Obstetrics and Gynecology," in The Education of American Physicians: Historical Essays, ed. Ronald L. Numbers (Berkeley: University of California Press, 1980), pp. 205-206; William Dosite Postell, "Medical Education and Medical Schools in Colonial America," in History of American Medicine, ed. Felix Marti-Ibanez (New York: MD Publications, 1959), p. 51; T. Gaillard Thomas, "A Century of American Medicine, 1776-1876, Part III, Obstetrics and Gynecology," Am. J. Med. Sci. 72 (1876): 221.

[12]Longo, "Obstetrics and Gynecology," p. 208.

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appeared which Bard intended for physicians' use.[13]

In the span of few brief years, a small group of urban doctors had found midwifery congenial to their professional calling. They were aided in this discovery by the economic upheavals of the mid to late eighteenth century. Poverty sent many pregnant women into the newly-established maternity wards within public hospitals. They functioned as clinical material, and provided doctors with the opportunity to observe the process of childbirth, to become sensitive to what could go awry and what could be done, if anything, when something went awry. Access to the poor of both sexes made hospitals valuable teaching centers for doctors, and they eagerly sought appointments there.[14] They could translate their improved skills into a larger, more lucrative private practice among a clientele with money to pay for doctors' services.

The economic downturn of the mid-eighteenth century barely touched one group of commercial-minded men and their families. While others plummeted into pauperism, their wealth remained intact, and childbirth changed dramatically

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[13]J. Whitridge Williams, A Sketch of the History of Obstetrics in the United States up to 1860 (n.p., n.d.), p. 29.

[14]Postell, "Medical Education and Medical Schools," p. 51; Richard H. Shryock, Medicine and Society in America, 1660-1860 (New York: New York University Press, 1960), p. 23.

for women at both ends of the scale. Shortly before the Revolution, for instance, less than 10 percent of the Philadelphia taxpayers owned almost 90 percent of the tangible wealth. Among the well-off was the Drinker family; and when one of its members, Sally Drinker Downing, went into labor in 1795, William Shippen, Jr. attended her. Presumably pleased with his ministrations during that birth, she requested his services when she delivered in 1797. Two years later, Shippen again attended her. Numerous reasons suggest themselves for her reliance on a male attendant. The thought of being assisted--touched--by an uneducated, uncooth midwife might have been sufficiently distasteful to the genteel Sally to preclude having one present in her home. More importantly, Shippen seemed possessed of extraordinary skill. He used both forceps and opium to make labor less distressing, and challenged the ages-old heritage of women in childbed to suffer. Since the wives of the Philadelphia gentry were peculiarly fecund with families of nine or more children, their perception of a doctor's ability to intervene effectively in the birth process was most persuasive in their decision to overturn obstetric tradition.[15] While the wives of the well-to-do chose to

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[15]Louise Kantrow, "Philadelphia Gentry: Fertility and Family Limitation Among an American Aristocracy," Popul. Stud. 34 (1980): 21-30; Judith Walzer Leavitt, "'Science' Enters the Birthing Room: Obstetrics in America Since the Eighteenth Century," J. Am. Hist. 70 (1983): 283-284.

become "patients," the same assessment cannot be applied strictly to women who went into hospitals to give birth. Their decision to throw aside the traditional birth attendant--and the traditional home setting--was forced upon them by circumstance. Unmarried, perhaps, they sought needed refuge in a hospital rather than deliver unassisted in a trash-filled urban back alley. Friendless and without family support, hospitals provided a welcome haven for those women. The promise of sanctuary in their time of need seemed sufficiently important for those women to submit to the presence of a male doctor. Regardless of the economic distance between those women, they represented an unconscious vanguard: both would be attended by men when they gave birth.

It should not be supposed that doctors clamored for more hospitals where they could hone their obstetric skills on charity patients to fill their coffers with money paid them by grateful, wealthy women. There remained professional opposition to the construction of hospitals in general and to lying-in hospitals in particular in the late eighteenth century. Benjamin Rush, for instance, condemned hospitals as "the sinks of human life."[16] He also stood

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[16]Quoted in Gert H. Brieger, "Hospital Infections: A Brief Historical Appraisal," in Occurrence, Diagnosis and Sources of Hospital-Associated Infections, eds. William J. Fahlberg and Dieter Groschel (New York: Marcel Dekker, Inc., 1978), p. 4.

as a symbol of doctors' reluctance to transgress standards of propriety, citing the proposal to create a lying-in hospital "as contrary to female delicacy." This chivalry notwithstanding, Rush's observation of hospitals filled him with pessimism about their usefulness. As a young medical student in Europe during the late 1760s, Rush made the requisite visit to a number of large hospitals including the by then infamous Hotel Dieu in Paris.[17] Countless pregnant women died there; and, by 1788, conditions had not improved. "It is nauseating," Jacques Tenon wrote in his report on the institution, "to think how [women] infect each other [while] four, five or six [share] one bed."[18] Meanwhile, dutiful nuns washed soiled linen in the nearby Seine River, the same river which supplied drinking water to the hospital.[19] In addition, seventeen "principle epidemics" of puerperal fever were known to have occurred in hospitals throughout Great Britain between the years 1760 and 1795. At the Royal Infirmary, in Edinburgh, where Rush trained,

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[17]James Thomas Flexner, Doctors on Horseback: Pioneers of American Medicine (New York: Viking Press, 1937; New York: Dover Publications, 1968), pp. 70-73, 85.

[18]Quoted in Erwin H. Ackerknecht, Medicine at the Paris Hospital, 1794-1848 (Baltimore: Johns Hopkins Press, 1967), p. 16.

[19]Owen H. Wangensteen and Sarah D. Wangensteen, The Rise of Surgery: From Empiric Craft to Scientific Discipline (Minneapolis: University of Minnesota Press, 1978), especially chapter 18.

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"almost every woman" admitted to the maternity service in 1773 "was seized with puerperal fever and died."[20] At home, Rush watched the filthy and crowded Brethren House in Bethlehem, Pennsylvania degenerate quickly into a septic pesthouse for wounded Revolutionary soldiers. The toll of patriots' lives angered Rush who complained bitterly of mismanagement to John Adams.[21] Hospitals, the doctor observed, "created diseases and produced the mortality of such as seldom prove fatal in private practice,"[22] and he

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[20]Fleetwood Churchill, Essays on the Puerperal Fever and Other Diseases Peculiar to Women (London: The Sydenham Society, 1849).

[21]Flexner, Doctors on Horseback, pp. 71-73.

[22]Brieger, "Hospital Infections," p. 5. By 1850, the endemic nature of puerperal fever in hospitals provoked one doctor to characterize the institutions as "gateways to death" for pregnant women unfortunate enough to enter them. Thomas Lightfoot, 'Some Practical Observations on the Disease Usually Called Puerperal Fever', Lond. Med. Times, 21 (1850): 464.

Thomas McKeown and R. J. Brown ignited a debate among historians of medicine when in 1955 they suggested that medical practice contributed little to the reduction in mortality that took place in the eighteenth century. "Medical Evidence Related to English Population Changes in the Eighteenth Century", Popul. Stud., 9 (1955): 119-141. E. M. Sigsworth surveyed the records and reports of a county hospital and concluded hospitals were not "gateways to death" and medical care had improved. "Gateways to Death? Medicine, Hospitals Mnd mortality, 1700-1850," in Science and Society, 1600-1900, ed. Peter Mathias (Cambridge: Cambridge University Press, 1972), pp. 97-110. J. H. Woodward agreed with Sigsworth's evaluation. See his "Before bacteriology--deaths in hospitals", Yorks Fac. J., (1969): 15-26. F. F. Cartwright also found hospitals relatively safe. He noted only six per cent of the surgical patients died of infection; and he blamed this mortality on "dirty" patients, not "dirty" surgeons. "Antiseptic

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questioned the wisdom of building any similar institutions in America.

No member of the urban medical profession in America wanted to replicate in their hospitals the deplorable mortality of European institutions; and they did not, not exactly. The earliest American hospitals remained quite small in comparison to their monolithic predecessors across the Atlantic and, therefore, the patient population here never approximated that of European hospitals. But, disease appeared, reappeared and claimed victims on every swipe it took through the smallest of American hospitals. The gentlemen of Philadelphia finally opened a lying-in ward in the Pennsylvania Hospital in 1803.[23] Thomas Chalkley James (1766-1835), a force behind the maternity service at the Almshouse, received appointment to the department as its first physician in 1810. In 1817, puerperal fever appeared and killed "several" women. James blamed the epidemic on

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Surgery," in Medicine and Society in the 1860s, ed. F. N. L. Poynter (London: Pitman Medical Publishing Co., 1968), pp. 77-103. Kenneth Keele, in contrast, argued hospital mortality increased because operations performed under septic conditions increased the risks of septic infections. "Clinical Medicine in the 1860s", in ibid., pp.1-11. While McKeown and Brown specifically mentioned the risks to hospitalized pregnant and parturient women, the other historians practically ignored the issue. The dismal mortality rate among women has thus been casually dismissed from this exchange among male historians.

[23]Charles Lawrence, History of the Philadelphia Almshouses and Hospitals (Philadelphia: Charles Lawrence, 1905; New York: Arno Press, 1976), p. 49.

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the "offensive effluvia" from the "fracture ward [situated] just below" the lying-in area. The maternity service was moved to another location in the hospital in 1824, perhaps in the hope of mitigating the pathological effects of accumulated miasm.[24] By 1830, the fever was in place at the hospital; and, according to a resident-physician, killed all the patients. "Nothing," he reported, "arrested the progress of the disease but the entire evacuation of the wards, and closing them against further admissions." The ward reopened in 1831, "soon after which, three cases of [puerperal fever] occurred in rapid succession.[25] Hugh L. Hodge, who had an appointment at the hospital, was somewhat perplexed by the cunning of the disease in a well-ventilated, spacious hospital. He knew "fresh air [was] daily and frequently admitted to the lying-in wards," yet puerperal fever appeared, in his words, "frequently." Something about "the atmosphere," he concluded, "induces a predisposition to peritoneal inflammation after parturition [as well as] erysipelas" in other patients.[26] Unable to

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[24]Williams, America's First Hospital, p. 131.

[25]Dr. Steward, "Transactions of the College of Physicians of Philadelphia," Am. J. Med. Sci. (1842): 417-418; Eaton, New England Hospitals p. 168.

[26]Hugh L. Hodge, "Cases and Observations regarding Puerperal Fever, as it Prevailed in the Pennsylvania Hospital in February and March, 1833," Am. J. Med. Sci. 12 (1833): 326.

prevent the disease among the women they originally had hoped to assist in their time of need, the doctors abandoned completely the department in the early 1850s.

Any proposal to construct a hospital for pregnant women in Philadelphia in the 1830s demanded serious discussion. In 1836, for instance, a wealthy doctor there bequeathed a large portion of his estate for the express purpose of building a charitable lying-in facility. A group of locally influential doctors formed a committee to consider the proposal. In addition to finding a suitable location for the hospital, its architecture would have to be studied. Both concerns were rooted firmly in their appreciation of the miasmatic theory of disease. Hospital design at the time, the so-called "block plan," the committee agreed, invited disease. Its multi-storied architecture provided only the most primitive separation of function and its lack of adequate ventilation was conducive to the accumulation of miasmatic influences. That "poisonous air once generated," wrote the chairman of the committee, Charles D. Meigs, "passes along the corridors, ascends the stairway and infects the building from the basement to the highest stories." To avoid providing a fertile breeding ground for puerperal disease, Meigs and the committee promoted, instead of the usual one large, multi-storied hospital, a number of small, self-contained cottages designed to accommodate only one or two females at one

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time. Isolated in a pastoral setting rather than crowded together in a stinking ward, the envisioned facility might avoid becoming a death chamber for its patients. The report submitted by Meigs and the other committee members met with immediate approval, but the Preston Retreat would not open for another thirty years.[27]

Similar regard for the salutary effects of ventilation came from other segments of Jacksonian society. Penal reformers urged a change in prison design from the block-type architecture to one of single floor, radiating wings and multiple windows. Rehabilitation of deviant Jacksonians rested on this radical change. A "moral architecture" which lent itself to the inculcation of inmates with respect for order, organization and efficiency might prevent recidivism.[28] Ventilation was also essential since reformers worried about the "contagion" of criminality spreading from hardened criminal to youthful offender.[29] Catharine Beecher spread the gospel of ventilation to homemakers across the country. Beecher, daughter of the

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[27]W. Robert Penman, "The Public Practice of Midwifery in Philadelphia," Trans. Coll. Phys. Phila. 37 (1969): 124-132.

[28]David J. Rothman, the Discovery of the Asylum: Social Order and Disorder in the New Republic (Boston: Little, Brown & Co., 1971), pp. 147-154.

[29]Christopher Lasch, "Origins of the Asylum," in The World of Nations (New York: Alfred A. Knopf, 1973), p. 13.

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well-known minister, Lyman Beecher, and sister of the author of Uncle Tom's Cabin, Harriet Beecher Stowe, had achieved prominence herself in the 1840s as "a national authority on the. . . physical well-being of the American home." The accolades followed publication of her Treatise on Domestic Economy in 1841. The expanded and revised version became The American Woman's Home or Principles of Domestic Science; being a Guide to the Formation and Maintenance of Economical, Healthful, Beautiful and Christian Homes in 1869. In it, Beecher declared, "The first and most indispensable requisite for health is pure air, both by day and night." To keep a home and its members healthy, respect for the dissipation of bad air should become part of house design. Even people who were not sick emitted stuff "through the lungs and skin [which was] as truly excrement and in a state of decay as that ejected from the bowels, and as poisonous to the animal system. . . ." And, as no one needed to be reminded, the sick person gave off from his body "exhalations. . . peculiarly deleterious." In a chapter titled "Scientific Ventilation," Beecher elaborated on the need for proper construction of chimneys, flues and pipes in a healthy home.[30] During this time, it should be

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[30]Catherine E. Beecher and Harriet Beecher Stowe, The American Woman's Home, with an introduction by Joseph Van Why (Hartford, Conn.: Stowe-Day Foundation, 1975; originally published 1869), pp. 57-65, 539. A penetrating analysis of this woman and her influence on contemporaries

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recalled, Lemuel Shattuck began collecting statistics on the population of Boston which would reveal the impact of bad air on the city's rising mortality rates.[31] Social reformers and the medical profession, too, pitched ventilation as a possible panacea against human ills. An open window approximated the mid-nineteenth century equivalent of a miracle drug.

Bad air, in the meantime, took its toll on the lives of women who went to hospitals to give birth. In those institutions, "infected air" was the natural result of overcrowding and "the respiration of a large number of children, and by offensive exhalations from the lochia, perspiration, fecal matter and so forth." According to Philip A. Davenport, a resident at the New York Alms House, "particular attention was paid to ventilation" of the lying-in department, [yet] puerperal fever erupted in January, 1840 and stayed until the end of May. Symptoms of the disease usually manifested between the second and fifth day following delivery, beginning with complaints of a chill. The woman's pulse "accelerated," and an "often intense" headache preceded great abdominal pain. "The

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is Katherine Kish Sklar, Catharine Beecher: A Study in American Domesticity (New Haven: Yale University Press, 1973).

[31]Barbara Gutmann Rosenkrantz, Public Health and the State: Changing Views in Massachusetts, 1842-1936 (Cambridge: Harvard University Press, 1972), p. 10.

patient lies on her back, with her knees flexed, and any motion," Davenport recalled, was "attended with increased pain." Her tongue changed color, turning "darker and dryer." Visible "erythematous patches [appeared] on various parts of the body." The woman grew more and more restless, and "then [came] that fatal symptom, the green vomit; whole potsful of dark green bilious serum. . . thrown off without effort in great gushes and. . . death close[d] a scene brief but truly terrible." The stench from the noxious fluids effortlessly emitted from the stricken woman put other women in the ward at risk to the disease. Miasmatic influences plagued mothers there for another six months until they miraculously disappeared.[32]

Once miasm invaded a woman's body, it could spark the inflammatory-type of puerperal fever. Inflammation of one of the organs of generation happened first, and then other viscera became involved. Charles Meigs described the process as akin to an "area expanding like the circles of wave in a lake wherein one has cast a pebble; [and] the motion," he conceded, would be "propagated to the shore."

That rather picturesque description of the pathology of puerperal fever was the result of many hours Meigs spent examining corpses. He found "extensive inflammation of the

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[32]Philip A. Davenport, "An Essay on Puerperal Fever," N. Y. J. Med. & Surg. 4 (1841): 313-314; 320.

peritoneum alone, or of the womb alone,--or of the womb and peritoneum both." Too, veins were "greatly inflammed and filled with inflammatory deposits of lymph, or gorged full of pus."[33] The inability to divine from autopsies the exact pathology of puerperal fever was an old story. Meigs' findings merely confirmed the legacy of uncertainty left by scientific methods of an earlier time when doctors thought optimistically autopsies would reveal the formerly hidden anatomic seat of all disease. This attempted shift to specificity began in Paris in the late eighteenth and early nineteenth centuries where pathological anatomy became the leitmotif of the so-called "Paris school" of medicine. Initial successes in identifying certain diseases as specific entities encouraged an unprecedented number of autopsies. Rene-Theophile-Hyacinthe Laennec (1781-1826), for example, concluded symptomatic variations could have the same anatomic seat. By examining the lesions (the site of structural or functional change in body tissue) found in persons who had died at various stages of an illness, Laennec proved that although a disease such as tuberculosis went through stages, each stage exhibiting its own symptoms, it was nevertheless, the same disease. An uncompromising

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[33]Charles D. Meigs, Obstetrics: The Science and the Art (Philadelphia: Blanchard and Lea, 1852), pp. 618, 638-639; Charles D. Meigs, The History, Pathology and Treatment of Puerperal Fever and Crural Phlebitis (Philadelphia: Ed. Barrington & Geo. D. Haswell, 1842), p. 11.

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commitment to dissection as the key to locating the anatomical seat of all diseases, while a step forward, produced eventually much the same diagnostic havoc as had earlier attempts to classify diseases strictly by observable symptoms. Puerperal fever, for example, became a diagnostic challenge. Xavier Bichat (1771-1802), physician at the Hotel Dieu, after performing numerous autopsies, determined all disease originated at the tissue or membrane level. His discovery of lesions in the peritoneum (serous membrane lining the walls of the abdominal and pelvic cavities) of women killed by puerperal fever persuaded him of its inflammatory nature. The disease, he argued, was specifically peritonitis (inflammation of the peritoneum). Meanwhile, other doctors found simultaneous lesions in the peritoneum and the uterus, two completely different types of tissue. Later autopsies revealed inflamed uterine veins and inflamed lymph vessels which suggested the disease could be either phlebitis or lymphangitis--or both. Subsequent investigations located only the presence of pus and no specific tissue lesions, prompting the diagnosis of puerperal fever as essentially a purulent fever.[34] When

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[34]Ackerknecht, Medicine at the Paris Hospital, pp. 51-57, pp. 88-99; Samuel Kneeland, "On the Contagiousness of Puerperal Fever," Am. J. Med. Sci. 11 (1846): 46. The specific diagnosis of puerperal genital tract infection remains a difficult clinical and microbiological task. Ronald E. Gibbs and Allen J. Weinstein, "Puerperal Infection in the Antibiotic Era," Am. J. Obstet. & Gynec. 124 (1976): 774.

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"statistical medicine" failed to reveal the true nature of puerperal fever, many American doctors discounted altogether the importance of anatomical study. Fordyce Barker, teacher of midwifery at Bellevue, insisted in 1857 that the disease had "no anatomical character" and "lesions are often not sufficient to influence the progress of the disease, or to explain the cause of death." He looked upon autopsies as useless, saying "we might as well seek to find out the causes of fire by a minute examination of the conflagration, as rely upon the appearances found after death to determine the character of a disease which results from the absorption of a morbid poison."[35] By mid-century, the "true pathology" of puerperal fever remained hidden from the medical profession.[36]

Of one thing American doctors were sure: "ward miasm [made] sick unto death" women exposed to it.[37] Trying to keep those influences at bay was a Sisiphyean task. Some took a cue from their European counterparts, seasoned veterans in the battle against puerperal fever. In

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[35]Fordyce Barker, Remarks on Puerperal Fever Before the New York Academy of Medicine, (New York: Edward P. Allen, 1857), p. 7; Davenport, "Essay on Puerperal Fever," 327; George Sickles, "Epidemic Puerperal Fever," St. Louis Med. & Surg. J. 7 (1850): 6.

[36]D. F. Condie review of Charles Meigs, Woman: Her Diseases and Remedies in Am. J. Med. Sci. 21 (1851): 193; C. Rynd, "Puerperal Fever and Erysipelas," Peninsular & Independent M. J. 2 (1860): 641.

[37]Charles Meigs, Obstetrics, p. 634.

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1859, when an Atlanta doctor, for instance, advocated the use of chlorine gas and chloride of lime to reduce miasmatic influences in hospitals, he followed the suggestion of Dublin doctors who forty years earlier fumigated and cleaned wards at the Rotunda with both chemicals trying to combat a two-year epidemic of puerperal fever.[38] The ineffectiveness of chlorine, chloride and other fumigants left doctors with only one recourse. Speaking before an audience of the College of Physicians of Philadelphia, in 1842, D. F. Condie conceded "no other means have been found to prevent the spread of the disease among the inmates and checks its further occurrence, except that of dispersing the patients and abandoning the wards." Even that drastic procedure carried no insurance against further outbreaks of the disease. "It has even happened that after the wards have been fully cleansed and ventilated, and remained vacant for some time," Condie admitted, that "on their reoccupation the disease has broken out anew."[39]

It is possible puerperal fever persisted in hospitals because of the interventionist techniques used by doctors. During a protracted labor, they might have

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[38]S. H. Dean, "An Essay on Childbed Fever Read before the Medical Association of the State of Georgia," Atlanta Med. & Surg. J. 4 (1859): 720.

[39]D. F. Condie, "Transactions of the College of Physicians of Philadelphia," Am. J. Med. Sci. 4 (1842): 415-416.

resorted to forceps. Sometimes, the instrument helped shorten a life-threatening labor; other times, used too zealously it lacerated flesh which became infected by vaginal flora which turned pathogenic in the presence of that traumatized tissue. A perfunctory rinsing, if any, of the forceps ensured that a doctor could introduce deep into a woman's uterus exogenous pathogens. Too, the introduction of anesthesia might have contributed to puerperal fever. Doctors could perform multiple internal examinations on drugged women to check the progress of the fetus without offending anyone's sensibilities in the process. Each examination increased the change of infection. Fingernails lacerated tissue too. Anesthesia and instruments promised a less traumatic childbirth for women; but until doctors understood completely the bacteriological origin of human disease, those innovations remained part of the problem of puerperal fever.

When doctors accepted contaminated air as the pathogen of puerperal fever, they were presented, at the same time, with the possibility of becoming a carrier. Examining women with the disease in hospitals imbued with concentrated miasmatic influences made them potential carriers of the noxious effluvia to the private, maternity patients. In 1823, John Douglas was "apprehensive that the contagion may be conveyed by persons much engaged in hospital duty, at a time when its atmosphere is heavily

loaded with this particular effluvium."[40] Joseph Smith, on the other hand, thought the theory of contagion explained an epidemic of puerperal fever confined to one doctor's clientele, but he could not consider the disease strictly contagious since women came down with it after being exposed to erysipelas. "These facts," he wrote in 1857, "while they militate against the specific contagiousness of the disease, go to prove its idio-miasmatic origin." Puerperal fever was, he concluded, "communicable," but not contagious.[41]

"I do believe that if any man should ever have the good fortune to detect or suggest any. . . measures, either to avert and prevent. . . puerperal fever, he would. . . confer one of the greatest of all benefits upon the advancement of. . . midwifery."[42] Certainly, the majority of the medical profession would have agreed with that sentiment of H. R. Storer in 1856. Epidemics of puerperal fever could not be stopped in hospitals with clean sheets, fumigated

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[40]John C. Douglas, "Report on Puerperal Fever in Answer to Queries from the General Board of Health," Am. Med. Record. 6 (1823): 739.

[41]Joseph M. Smith, "Puerperal Fever: Its Causes and Modes of Propagation," New York J. Med. 3 (1857): 154, 158.

[42]H. R. Storer, "Exposure to Erysipelas during Labor," Boston Med. & Surg. J. 65 (1856): 82.

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wards, scrubbed walls or open windows. Indeed, at an annual meeting of the Massachusetts Medical Society, J. Mason Warren blamed the complications seen in hospitals on "the impaired hygenic condition of [Boston]."[43] To admit freely those influences into the hospital by way of open windows countermanded the previous belief in ventilation as a preventive of puerperal fever. Simultaneously, doctors in private practice learned all attempts at personal cleanliness did not prevent puerperal fever. On the eve of those disappointing results from various preventive techniques, word was received of the experiments performed by Joseph Lister. Topical application of carbolic acid on a wound retarded inflammation. Perhaps, doctors reasoned, their approach to preventing puerperal fever had been misguided. Rather than concentrate on the general environment of a hospital lying-in ward or, as private practitioners had done, try to clean themselves, they should have directed their efforts toward the real culprit, the open wound of childbirth.

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[43]Quoted in Edward Churchill," The Pandemic of Wound Infection in Hospitals: Studies in the History of Wound Healing," J. Hist. Med. & Allied Sci. 20 (1965): 397.

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CHAPTER IV

ANTICONTAGIONISTS AND ANTISEPTIC OBSTETRICS: TOWARD A NEW IMAGE FOR HOSPITALS

In America, the routinized use of antiseptics as a safeguard against the occurrence of puerperal fever began with doctors practicing obstetrics in the lying-in wards of the few existing urban hospitals in the 1870s. Anti-contagionists comprised an important part of this vanguard. The prevention of puerperal fever had always encouraged conflict within a profession divided over the nature of the disease and what precipitated its transfer from woman to woman. The adoption of antiseptics for preventive purposes occasioned yet another round of debate. Again, the source of the disagreement remained the same: whatever a doctor determined to be the cause of puerperal fever informed what preventive actions he would take. Anticontagionists seized upon scientific evidence pointing to the pathological effects of septic matter on the blood, and believed the presence of decomposing organic debris within a woman's reproductive tract caused puerperal fever or, more logically to them, puerperal septicemia. They did not consider

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septicemia a specific disease; but, more simply, a morbid condition of the system. A condition, unlike a specific disease of smallpox, for example, could not be considered contagious. Beyond those basic assumptions, anticontagionists disagreed among themselves about both the source of the pathogen; that is, septic matter, and how antiseptics might mitigate its profound effects on a woman in childbed. One group of anticontagionists claimed women "poisoned" themselves as a result of the decomposition of retained matter in the womb. Prompt, regular irrigation of the birth canal with antiseptics represented their therapy of choice. Another group of anticontagionists thought the poisoning influence found its way to the birth canal with the aid of an outside source; and, after being inoculated, triggered the decomposition of blood and tissue. They identified bad air, unclean instruments and their own hands as potential inoculators, and advocated a liberal application of antiseptics both inside of a woman's body as well as on things and persons who came into contact with the open wound of childbirth. Factions within the anticontagionist camp defended different etiological explanations for puerperal septicemia, but together they campaigned for the integration of antiseptics into the management of obstetrics within a hospital environment.

The use of antiseptics in hospital maternity wards produced encouraging results. In an environment almost

completely under their control, doctors unleashed a veritable flood of chemicals into the birth setting, and some boasted of a mortality-free childbirth in hospitals where the antiseptic principle had been adopted. Childbirth in the home, in the meantime, showed no such signs of decreased morbidity and mortality. Puerperal fever attacked women living in urban brownstones and ghetto cellars. Neither setting permitted doctors the latitude of chemical application which maternity wards offered. The apparent ability of doctors to prevent disease in institutions formerly condemned as pesthouses contributed to a changing image for hospitals as maternity centers. When obstetricians began using antiseptics in lying-in wards, they unknowingly took the first, faltering steps toward establishing the normative hospital birth.

As a young resident, W. Gill Wylie learned the value of carbolic acid in the management of obstetric patients from his professor at Bellevue, James R. Wood, who "delivered thirty-six women without the occurrence of a case of puerperal fever, and he believed that this result was due to the free use of carbolic acid, and the burning of all sponges, rubber cloths, etc." Wylie later traveled to Edinburgh to meet the architect of the antiseptic principle, James Lister, and to observe his technique. Wylie

interpreted the method for obstetric purposes, and ultimately outlined numerous steps to be followed during the course of a labor and delivery. When the first contractions began, Wylie washed the woman's "vagina and vulva . . . with carbolic acid." Linen [was] "carbolized with the spray immediately before being used," and the doctor washed his hands and "all instruments . . . in a solution of carbolic acid." After the delivery, he washed the woman's "external parts thoroughly with . . . carbolic acid and [advised] vaginal douches from two to four times a day." By 1872, the American doctor called himself "a convert to the antiseptic plan, especially following the practices and teachings of Lister in all cases of labor."[1]

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[1]W. Gill Wylie, "The Use of Antiseptics after Abortion and Labor," Am. J. Obstet. 16 (1883): 863-864.

There were a number of alternative ways for obstetricians to learn about Lister's technique beyond traveling abroad. Both The Lancet and the British Medical Journal which carried the surgeon's article were available in American medical libraries; and, in addition, those few surgeons here who experimented with the method reported promptly the results in American medical journals throughout the late 1860s and early 1870s. A. Scott Earle, "The Germ Theory in America: Antisepsis and Asepsis (1867-1900)," Surgery 65 (1969): 508-522 and Gert H. Brieger, "American Surgery and the Germ Theory of Disease," Bull. Hist. Med. 40 (1966): 137. Lister presided over the Surgery Section of the International Medical Congress held in Philadelphia in 1876, and then traveled across the country to promote and explain antiseptic surgery. "Antiseptic Surgery," in Transactions of the International Medical Congress of Philadelphia, 1876 (Philadelphia: Printed for the Congress, 1877): pp. 536-544.

The history of the adoption of antiseptic obstetrics by American doctors has not received critical inquiry. Theodore Cianfrani concludes "the adoption and success of

Joseph Lister (1827-1912) applied carbolic acid topically to open wounds while Professor of Surgery at the University of Glasgow. In 1865, Lister, like all other surgeons, observed the relative ease with which simple or closed fractures healed while, in contrast, compound fractures, those which bone tore through flesh, were life threatening wounds. The usual sequelae included fever, erysipelas, the appearance of visible reddish streaking on the wounded limb, inflammation, pus and gangrene. Compound fractures could--and did--terminate fatally. To prevent such fatalities, surgeons urged swift amputation of the wounded arm or leg at the first indication of any complication. An amputated stump, however, like any open wound, proved susceptible to inflammation and suppuration.

Lister's methods were immediate and universal." A Short History of Obstetrics and Gynecology (Springfield, Ill.: Charles C. Thomas, 1960), p. 251. More recently, critics of modern birth practices describe a less enthusiastic appreciation of antiseptics. Richard Wertz and Dorothy C. Wertz report obstetricians failing to routinely disinfect their hands as late as the 1940s. Lying-in: A History of Childbirth in America (New York: The Free Press, 1977), p.127. Both extreme views reveal the authors' assumption of a monolithic medical profession, and I question any interpretation of doctors' behavior which fails to acknowledge their heterogeneity. They may have been united in their function as healers; but, beyond that, their disagreement on substantive issues such as, for instance, the pathogenesis of puerperal fever made uniform responses to prevention most unlikely. In an earlier article, I tried to illuminate the pluralistic nature of the nineteenth century medical profession. "Equal Treatment for All: American Medical Remedies for Male Sexual Problems, 1850-1900," J. Hist. Med. & Allied Sci. 33 (1977): especially 57n.

Death commonly followed an amputation. Lister's calculated use of carbolic acid on the lacerated flesh of a compound fracture was grounded firmly in his appreciation of the laboratory findings of Louis Pasteur (1822-1892). Experiments conducted by the French chemist during the early 1860s revealed the existence of innumerable, invisible, living microorganisms in the atmosphere, and, according to Pasteur, their vital activity caused organic substances to ferment and putrefy. Lister reasoned those minute beings could also decompose wounded flesh. After the "particles," as he called them at one time, entered a patient's system through the portal of the open wound, they transformed the blood, normally thought of as a bland fluid, into an "irritant." Inflammation and suppuration, Lister believed, followed irritation of traumatized tissue by the contaminated blood. He found carbolic acid impressive after learning of its "remarkable effects" on both the stench emanating from decomposing garbage and the "entozoa" in nearby cattle. Hoping it would destroy "atmospheric germs," Lister cleaned out, irrigated, wounds with carbolic acid and then covered them with a dressing saturated with the fluid. Of the eleven patients so treated by him, nine survived their compound fractures. At a time when the mortality rate from those particular wounds approached 50 percent, Lister's survival rate was unrivaled. After the initial trials with carbolic acid proved promising, Lister predicted equally

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successful results with the antiseptic principle on the planned wounds of surgery. The use of antiseptics might eliminate the macabre trinity of all open wounds--inflammation, suppuration and death.[2]

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[2]Joseph Lister, "On a New Method of Treating Compound Fracture, Abscess, Etc., with Observations on the Conditions of Suppuration," Lancet 1 (1867): 326-329; 357-359; 387-389; 507-509; ibid. 2 (1867): 95-96; "An Address of the Antiseptic System of Treatment in Surgery," British Med. J. 2 (1868): 53-56; 101-102; 461-463; 515-517; ibid. 1 (1869): 301-304. F.F. Cartwright, "Antiseptic Surgery," in Medicine and Science in the 1860s," ed. F. N. L. Poynter (London: Wellcome Institute of the History of Medicine, 1968), pp. 83-84. Lister's ready acceptance of a diminuitive population cannot be attributed to mere intuition. Not surprisingly, microscopes were an important tool in his early investigations of inflammation since his father, Joseph Jackson Lister, contributed to the development of the achromatic microscope. Claude E. Dolman, "Joseph Lister," in Dictionary of Scientific Biography, ed. Charles Coulston Gillespie, vol. 8 (New York: Charles Scribner's Sons, 1973), pp. 309-413. Rickman J. Godlee wrote a sensitive biography of his uncle. Lord Lister (London: Macmillan & Co., 1917). Though this remarkable man deserves a thorough, critical study, none is available.

Hubert A. Lechavalier and Morris Solotorovsky describe Pasteur's early experiments in vivid, complete detail. Three Centuries of Microbiology (New York: McGraw-Hill Book Co., 1965; New York: Dover Books, 1974), especially pp. 18-31.

Thomas P. Gariepy argues persuasively that surgeons initially adopted antisepsis as a practical application of Pasteur's work on fermentation and putrefaction and not, as has been suggested by historians, their grasp of the germ theory of disease. "The Acceptance of Antiseptic Surgery in the United States," Notre Dame University, Master's Thesis, 1976. An indentical interpretation is pertinent to the initial use of antiseptics by obstetricians, and Gariepy's work enhanced greatly my understanding of this. American obstetricians' reactions to and understanding of the germ theory of puerperal fever is discussed in Chapter Five following.

hospitals seized upon Lister's antiseptic principle something more than serendipity prompted their decision to integrate into their management of childbirth a technique designed by a surgeon for use on surgical patients. In many ways, obstetricians and surgeons faced the same problems. The fever following childbirth resembled in its manifestations that of so-called wound fever. Complications included inflammation, the visible outbreak of erysipelas and evidence of pus. During an address before the American Public Health Association in the winter of 1874, Samuel D. Gross, educator, author and revered surgeon, stated unequivocably "puerperal fever is in the parturient female what erysipelas, pyemia or hospital gangrene is in the male after serious wounds or injuries."[3] Citing the similarities between a fever common to women in childbed and that of patients with a variety of open wounds made sense to doctors who had long observed the similarities between the womb after childbirth and the area of an amputated

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[3]"The Factors of Disease and Death After Injuries, Parturition and Surgical Operations," Reports and Papers, American Public Health Association 2 (1874-1875): 400-414; reprinted in Medical America in the Nineteenth Century, ed. Gert H. Brieger (Baltimore: Johns Hopkins Press, 1972); p. 192. On the common concerns of obstetricians and surgeons see James Y. Simpson, Clinical Lectures on the Diseases of Women, ed. Alexander R. Simpson (New York: D. Appleton & Co., 1877), p. 304; Wyndham E. B. Lloyd, One Hundred Years of Medicine, 2nd ed. (London: Gerald Duckworth & Co., Ltd., 1968), p. 200; Erwin S. Wheeler, "The Development of Antiseptic Surgery," Am. J. Surg. 127 (1974): 574.

stump.[4] Walter Channing in the 1850s called the parturient uterus a "wounded organ."[5] Earlier, Charles Meigs pointed out puerperal fever caused a woman's veins to "inflame as do the veins in an amputated limb--the frequent cause of death from that surgical operation."[6] If antiseptic treatments of open wounds, either surgical or accidental, prevented their inflammation, then, obstetricians had reason to assume a similar method might produce the same good effects on the open wound of

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[4]William Harvey in 1651 called the area of placental attachment in the uterus after childbirth "a large internal ulcer." Quoted in Owen H. Wangensteen and Sarah Wangensteen, The Rise of Surgery From Empiric Craft to Scientific Discipline (Minneapolis: University of Minnesota Press, 1978) p. 410. Richard W. Wertz and Dorothy C. Wertz erroneously cite Pasteur some centuries later as "the first to point out that parturients [were] wounded women." Lying-in, p. 119. Obstetricians had an immediate professional need to find something to prevent puerperal fever. Unlike surgeons, they carried the stigma of directly harming their patients by carrying the disease to women. Neither am I untouched by their humane motivations to control puerperal fever.

[5]"On the Contagiousness of Puerperal Fever," Boston Med. & Surg. J. 52 (1855): 295-296; and Ezra Bennett, "On the Identity of Erysipelas and a Certain Form of Puerperal Fever, and Its Contagiousness," Am. J. Med. Sci. 19 (1850): 379; John O'Reilly, "Observations on the Identity of Erysipelas and Puerperal Fever," Am. Med. Gazette 9 (1858): 706. For a modern description of the "wound," see William A. D. Anderson, Pathology, 6th ed., vol. 1 (St. Louis: C. V. Mosby Co., 1971), p. 288.

[6]The History, Pathology and Treatment of Puerperal Fever (Philadelphia: Ed. Barrington & Geo. D. Haswell, 1842), p. 16. This observation made Meigs an heroic bloodletter believing the operation reduced effectively the volume of blood with which the system had to deal.

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childbirth. Achieving a consensus on which particular application of antiseptics best suited the practice of obstetrics proved problematic to a profession still divided over the cause of puerperal fever.

Anticontagionists subscribed to the etiological theory of the septic origins of puerperal fever. To them, the condition was a "septo-pyemic process resulting from the absorption of infectious putrid elements by the blood vessels and lymph channels of the wounded surfaces of the lying-in woman with or without localization in other organs."[7] This understanding of the pathology of puerperal fever was modern. In their analysis, anticontagionists revealed an intelligent appreciation of an accumulating wisdom derived from the experimental findings of laboratory scientists. They found this scientific evidence persuasive, in part, because it confirmed their own particular clinical observation of women with puerperal fever.

In the early part of the nineteenth century when puerperal fever began establishing its identity as an endemic disease among lying-in women in America, European investigators studied the effects of putrid fluids on vital processes. In various laboratories, researchers such as Bernard Gaspard (1788-1871), and Francois Magendie (1783 -

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[7]Fordyce Barker, Puerperal Diseases, p. 461.

1855) inoculated foreign substances, blood, pus, urine and feces, for example, into the bodies of living animals. Dissection revealed what scientists called a "putrid intoxication" of the blood, a condition P. A. Piorry labeled more precisely in 1837, septicemia. The action of injected materials on the bloodstream was considered chemical in nature and analogous to fermentation and its end result, putrefaction. Scientists found similar evidence of putrid intoxication of blood when they dissected human cadavers. The discovery of internal abscesses and pus-forming lesions in those subjects indicated the need for another variation on the term septicemia. Again, Piorry made sense of the apparent anomaly by calling putrid blood with pus pyemia. Researchers theorized suppurative lesions "leaked" pus into the bloodstream, and it sometimes collected as mass, an abscess, on internal organs. The idea of two separate pathological process, septicemia and pyemia, gave American clinicians reason to believe science had finally revealed the essential pathology, the true nature, of puerperal fever.[8]

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[8]William Bullough, The History of Bacteriology (Oxford: Oxford University Press, 1938; New York: Dover Books, 1979), pp. 129-152. Claude Bernard (1813-1878), a French "physiologist," continued the emphasis on the primacy of bodily fluids, and campaigned for experimental investigation of what he called the milieu interieur rather than the patients' symptoms and signs. He equated the task to "passing through a long and ghastly kitchen [to reach] a superb and dazzling lighted hall." An Introduction to the Study of Experimental Medicine, trans. Henry Copley Green (New York: Dover Publications, 1957; originally published 1865), p. 15.

Anticontagionists found scientific evidence of the septic cause of puerperal fever appealing because it confirmed a long held suspicion about the origins of the disease and, at the same time, allowed them to interpret their observation of stricken women in a modern light. For instance, an unpleasant smell often accompanied the onset of the fever, and the odor hinted strongly at some putrefactive process. Samuel Lusk recalled visiting a woman in childbed and "on entering the room found the stench intolerable."[9] Too, the lochia (the normal discharge from the reproductive tract following childbirth) is both abundant and, usually, dramatic. Blood flows freely in the first stage; and, during the second phase, mucous and wound exudation follows blood. In the third and final stage, little blood is evident; but, as is now known, the fluid which seeps out contains microorganisms and degenerating cells. When this routine expulsion of fluid and matter did not approximate the seasoned doctor's expectation of normal volume, and if he detected an odor from the uterus, he considered those warning signs of a dangerous, potentially deadly, internal decay.[10]

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[9]William T. Lusk, "On the Nature, Origin and Prevention of Puerperal Fever," in Transactions of the International Medical Congress of Philadelphia, 1876, ed. John Ashworth (Philadelphia: Printed for the Congress, 1877), p. 834.

[10]Matthew D. Mann, "Report on Obstetrics for 1875-76," Am. J. Obstet. 10 (1877): 155-156.

Anticontagionists agreed septic matter caused puerperal fever, but they disagreed among themselves about the source of the pathogen. One group sponsored the notion of autogenesis believing a "woman [was] poisoned by her own lochia."[11] The process began spontaneously within the uterus when retained lochia, blood clots and pieces of placenta collected, fermented, started to decompose and through this chemical action, poisoned the blood. According to their theory, "chemical changes produced by the poison. . . accelerate. . . the molecular metamorphosis of the blood and tissues."[12] Self absorption of putrefied matter and fluid resulted in puerperal septicemia. This matter, the autogenetic faction of the anticontagionists maintained, decomposed, as did any organic substance, of its own accord.

Scientists provided experimental proof of an internal fermentative process as the essential pathology of disease and, in doing so, substantiated a centuries-old theory of the cause of puerperal fever. The Hippocratic text, De Mulierum Morbis, identified suppression of the lochia as the cause of the febrile condition which overtook women while recovering from childbirth. The explanation retained its medical currency until the sixteenth century when a physician, Mercatus, volunteered a minor refinement of the humoral etiology. In 1570, he wrote "the development of fever in the puerperium was caused by the putrefaction of lochia retained in the uterus." C.H. Peckham, "A Brief History of Puerperal Fever," Bull. Hist. Med. 3 (1935): 187, 189.

[11]William Goodell, "Report of an Epidemic of Puerperal Fever," Am. J. Obstet. 7 (1874): 164.

[12]Fordyce Barker, The Puerperal Diseases, (New York: D. Appleton & Co., 1874), p. 273.

For these doctors, flushing out the reproductive tract with chemicals represented the defense against septicemia. A foremost promoter of internal irrigations was E. R. Peaslee (1814-1878), in 1870, Professor of Diseases of Women at Dartmouth College. Peaslee enjoyed a fine reputation as a gynecological surgeon; and, in that capacity, became an experienced irrigator. Routine postoperative complications following ovariotomy prompted him in the mid-1850s to introduce "a catheter. . . into the peritoneal cavity and boldly wash [it] out."[13] Peaslee used the irrigations to "prevent or . . . remove septicemia by the removal of a fluid in a state of decomposition or soon to become so."[14] Prompt removal of any "turbid collections" inside of a woman's body might prevent the septicemic process.[15] Word of Lister's good results with a similar technique on wounds further enhanced the value of chemical irrigations. "The experiments of Mr. Lister," J.

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[13]T. Gaillard Thomas, "A Century of American Medicine, 1776-1876, part III, Obstetrics and Gynecology," Am. J. Med. Sci. 72 (1876): 149.

[14]E. R. Peaslee, "Injections into the Peritoneal Cavity After Ovariotomy," Am. J. Obstet. 3 (1870): 301.

[15]James R. Ricci, One Hundred Years of Gynecology (Philadelphia: Blakiston Co., 1945), p. 75. Joseph Kammerer, "Historical Review of Uterine Injections," Am. J. Obstet. 1 (1869): 377-404; S. Beach Jones, "Case of Acute Puerperal Septicemia Treated with Intra-Uterine Injections of Carbolic Acid," Am. J. Obstet. 9 (1876): 484-486.

C. Nott recorded in 1870, "have proven that antiseptics have a striking influence in preventing inflammation, putrefaction and their consequences."[16] As an obstetrician explained, he "like the surgeon must prevent septic accidents [and] the infected portion of the genital canal must, if possible, be thoroughly disinfected."[17]

The enthusiasm with which autogenetists flushed out women's reproductive tracts reflected their modern approach to puerperal disease. They adopted quickly experimental evidence proving the origins of blood poisoning; and, they grasped the significance of Lister's antiseptic method for the prevention of blood poisoning in their obstetrical patients. Treating the parturient uterus as an open wound was imaginative and innovative. Personal and professional needs, perhaps, cannot be discounted in the selection of a particular therapy. Recall obstetricians alone faced the charge of harming their patients in the most direct of ways--by carrying disease to them. The pressure to relieve themselves of this stigma by placing the blame elsewhere--in this case, on the patient--explains partially the vigorous use of vaginal injections. Science offered

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[16]J.C. Nott, "Intra-Uterine Medication," Am. J. Obstet. 3 (1870): 59.

[17]Francis L. Haynes and John R. Haynes, "Irrigation of the Puerperal Uterus: Its Uses and Dangers--with Especial Reference to the Treatment of Puerperal Fever," Am. J. Obstet. 22 (1889): 114.

autogenetists a rationale for denying any personal responsibility for the appearance of the disease among their patients.

Using scientific evidence to acquit the medical professional of his image as a "private pestilence" is, at best, tentatively suggested for a small minority of anticontagionists identified primarily by their belief in the autogenesis of puerperal septicemia. Heterogenetists comprised the other, larger faction within the anticontagionist camp, and they recognized themsleves as carriers. They agreed with the autogenetists septic matter triggered septicemia, but they denied its spontaneous development inside of a woman's body. To them, the deadly putrefying process began after the pathogen had been introduced. Some thought they directly inoculated septic material into a woman's body during a manual examination; others blamed contaminated air, septic influences. Even this latter group, however, knew contaminated air made exposed instruments--and their hands--potential inoculators. For the heterogenetists, vaginal and uterine irrigations were but one defense against puerperal septicemia. These anticontagionists advocated and used antiseptics on everything and everyone, including themselves.

The heterogenetists exhibited a modern understanding of the pathology of puerperal septicemia, and found

scientific evidence congenial to their own clinical experiences. They were innovative in their application of Lister's technique for obstetrical purposes. They used antiseptics, though, because of their continued belief in the power of bad air to cause disease. This idea remained especially strong among doctors who worked in hospitals. John O'Reilly, for instance, thought "gangrenous erysipelas, hospital gangrene and puerperal fever [were] generated by the exhalation from human effluvia in crowded and badly ventilated public institutions." This influence, he went on "may be so intense as to poison the surface of a fresh wound."[18] A congregation of febrile patients, their blood, vomit, urine and sloughing wounds bred septic influences. In the late 1860s, the Bristish obstetrician, James Simpson, blamed epidemics of inflamed and suppurating wounds on what he called "hospitalism."[19] In 1875, his

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[18]O'Reilly, "Observations on the Identity of Erysipelas and Puerperal Fever," 708-709.

[19]James Y. Simpson, Anesthesia, Hospitalism, Hermaphroditism and a Proposal to Stamp Out Small-pox and Other Contagious Diseases, ed. W. G. Simpson (Edinburgh: Adam & Charles Black, 1871). To determine the extent of contamination in the air, the staff could always observe how long it took for the hospital siverware to tarnish. Wheeler, "Development of Antiseptic Surgery," 575. Simpson, an energetic advocate of hospital reform, urged replacement of large, disease-ridden institutions with a series of small, temporary quarters which would not breed hospitalism. He perceived the antiseptic technique as a threat to this needed reform, and publicly critized Lister. Dolman, "Joseph Lister," p. 404. Florence Nightingale, also a vocal proponent of hospital reform, joined with Simpson to oppose

colleague, John Ehrichsen, defined it further as "a septic influence capable of infecting a wound or of affecting the constitution injuriously."[20] American hospitals created their own hospitalism. During "the winter. . . when the ventilation was imperfect," a physician on staff at the Bellevue Lying-in Department, predicted it "merely a question of time as to when the sanguineous and purulent discharges of patients would load the atmosphere with morbific elements to such a degree as to exercise a deleterious influence." The conditions angered William T. Lusk who blamed the administrators at Bellevue for this particular hospitalism. He declared hotly "it would have been possible to have made a pesthouse of the garden of

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Lister. See the illuminating essay by Charles E. Rosenberg, "Florence Nightingale on Contagion: The Hospital as Moral Universe," in Healing and History: Essays for George Rosen, ed. Charles E. Rosenberg (New York: Science History Publications, 1979), pp. 116-136. Nightingale and Simpson had ample reason to regard Lister as a stumbling block. By 1870, Lister, so impressed with the results of antisepsis and the decline in disease, proposed "no material alteration of the existing [hospital] system." "On the Effects of the Antiseptic System of Treatment upon the Salubrity of a Surgical Hospital," Lancet 1 (1870): 200 and "Further Evidence Regarding the Effects of the Antiseptic Treatment upon the Salubrity of a Surgical Hospital," ibid. 2 (1870): 287-289.

[20]Quoted in Edward Churchill, "The Pandemic of Wound Infection in Hospitals: Studies in the History of Wound Healing," J. Hist. Med. & Allied Sci. 20 (1965): 396. After Erichsen visited America in the early 1870s, he reported to his British colleagues "antiseptics are not so much needed in the American hospitals as in ours [since] sources of contamination do not exist. . . to the same extent." "Impressions of American Surgery," Lancet 2 (1874): 718-720.

Eden" with similar inept management.[21] An epidemic of puerperal disease among women sharing an effluvia-filled room was inevitable; and that historical truth "certainly points to the fact of a heterogenetic cause, and left much room to doubt the theory of. . . autogenesis."[22]

Convinced bad air poisoned the fresh wound of childbirth, doctors hoped a liberal use of antiseptics would control the incidence of septic disease in lying-in wards. When the New York Infant Asylum opened in the winter of 1871, for instance, its staff intended to do battle with bad air. They washed wards with antiseptics and made "local applications" of chemicals to women in childbed. These doctors further recognized atmospheric septic influences, the invisible poison, contaminated their hands just by the fact they walked the wards. So, among the house rules, one required the "attending obstetrician [to] wash his hands thoroughly, annoint them, and surround his wrist and forearm with a clean towel before making the usual examinations." The antiseptic regimen enforced for the benefit of the unmarried, pregnant women seeking shelter there produced

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[21]William T. Lusk, "The Genesis of an Epidemic of Puerperal Fever," Am. J. Obstet. 8 (1875): 386, 388. A. Scott Earle thinks surgeons did not consider "hospitalism" a problem sufficient to encourage their use of antiseptics. "The Germ Theory," 510. Obstetricians, I am persuaded, respected bad air as a formidable pathogen.

[22]John M. Keating, "A Case of Puerperal Fever, with Post-Mortem Examination," Am. J. Obstet. 9 (1876): 661.

gratifying results. From December, 1871, through January, 1874, no deaths occured in 84 deliveries. From January, 1874, through January, 1875, one death occured in 75 deliveries. In the latter month, one mother developed erysipelas and shortly thereafter "three women developed symptoms of mild septic poisoning." Fearing an epidemic, the staff removed the women from the poisoned ward and the fumigated it with antiseptics.[23]

In the March 3, 1877, issue of The Medical Record, an unsigned editorial (probably written by George F. Shrady) criticized the staff at the Charity Hospital in New York City for its failure to prevent an epidemic of puerperal fever the previous January which resulted in "several deaths." Walter R. Gillette, Visiting Physician to the Lying-in Service at the institution responded promptly to the allegation of irresponsibility. He reported to the editor almost 1,400 deliveries from 1874 through 1876 had produced a mortality from puerperal fever at "say about three-quarters of one percent." Gillette outlined in detail the rules and procedures which he believed contributed to the staff's ability to control the incidence of the disease among maternity patients. Once a pregnant woman arrived at the hospital, she could not "commingle with the other

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[23]F. A. Burrall, "The Use of the Modern Dwelling House as a Maternity," Med. News 42 (1883): 522-523.

patients." The "restrictions," Gillette acknowledged, made women feel "they are prisoners," but this segregations was necessary to ensure safe conduct through labor, delivery and their the lying-in period. Further, "every precaution in the direction of personal and ward cleanliness is observed, [and] clinical exhibition of the women is interdicted." When puerperal fever attacked one of the patients, an antiseptic regimen went into effect. Women had "daily baths of carbolized water, their clothing was changed throughout, and every effort, hygienic, police, and quarantine [was] exerted in their behalf." With the aid of carbolic acid, doctors at the Charity Hospital believed puerperal fever "suppressible. . . once once it has started."[24]

When an epidemic of puerperal fever erupted in the Lying-in Department at Bellevue in the spring of 1874, doctors there began an aggressive campaign against the effluvia of septic influences with antiseptics. The wards had become extremely crowded as the Panic of '73 made itself felt. From April 1, 1873 through April 1, 1984, 434 women were admitted and, of those, 23 died. One death occurred in

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[24]"Puerperal Fever in Charity Hospital," Med. Record 12 (1877): 137; Walter R. Gillette, "Puerperal Fever at Charity Hospital," ibid. 12 (1877): 173-174. The editorial reply accused Gillette of "begging the real point at issue by confounding the arrest of the disease with its prevention." That author favored the destruction of large hospitals to eliminate the "hospitalism" responsible for puerperal fever in the first place. "Puerperal Fever in Charity Hospital," ibid. 12 (1877): 170-171.

late August followed quickly the next month by four cases of the disease. Although none of those terminated fatally, they "excited so much uneasiness on [the doctor's] part that [he] directed the closure of the confinement ward and the room next adjacent in which puerperal women were ordinarily retained during the first four days following parturition." During the year-long seige, every woman received a "catheter and syringe [which were] put in carbolic acid after each use." Soiled linen was destroyed, and no sponges were allowed in the department. Carbolic acid was sprinkled on the floors. In addition, all doctors "washed in carbolic acid and glycerine before going from one infected case to another, and before confining any case." The mortality rate could have been much worse without those antiseptic precautions. As it was, the battle against disease proved frustrating since the staff could not turn away any woman who arrived with a "high temperature" and then subsequently placed "in the ward into which a freshly confined case has to be brought."[25]

The lying-in service of the Charity Hospital merged with that of Bellevue in 1875, making the department the "largest in the country." The majority of the women who went

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[25]Lusk, "Genesis of an Epidemic," 370, 385-386. Jane Mottus gives a much higher mortality rate. New York Nightingales: The Emergence of the Nursing Profession at Bellevue and New York Hospital (Ann Arbor: U. M. I. Research Press, 1981), pp. 56-57.

there did so because of poverty. Hospitals in the 1870s retained their reputations as institutions of charity, and all but the most needy shunned them. Middle class women, for instance, continued to give birth in their homes, while "seduced and betrayed" women sought refuge in a hospital. Almost 50 percent of the admissions to the enlarged Bellevue service were unmarried, pregnant women and prostitutes. They represented the "most wretched and hopeless. . . women worn out with poverty and want."[26] Without friends or family, their only assistance during this troubled time came from the medical profession. The stigma attached to the "lapse of virtue" was, as one doctor commented, more "severely punished by social ostracism. . . in New England" than anywhere else.[27] Doctors provided exceptional care for these social outcasts, and saw them through their time of alienation with an impressive regard for the safety of their "inmates." Of the 570 deliveries completed among those pitiful females in 1875, only 15 deaths occurred. Walter Gillette attributed the noteworthy "immunity for the septic diseases. . . wholly to our rigid system of cleanliness."[28]

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[26]Walter R. Gillette, "Report of the Lying-In Service of the New York Charity Hospital for the year 1875," Am. J. Obstet. 9 (1876): 452-453.

[27]Barker, Puerperal Diseases, 177.

[28]Gillette, "Report of the Lying-In Service," 466.

The emphasis doctors placed on cleanliness, quarantine and antiseptic regimens in lying-in wards along with the encouraging results produced by those actions sustained their anticontagionism. After a number of women were stricken at the Philadelphia Hospital, John S. Parry, attending accoucheur, found "no facts which tend to prove puerperal fever contagious." Air made putrid "with the exhalations of surgical and puerperal patients [was] eminently toxic [and] undoubtedly one of the most efficient and frequent causes of the development of puerperal fever." Parry knew doctors in daily contact with the ailing women continued their private obstetric practice, and none of those patients suffered any complication during their lying-in time. Further, the same doctors attended white women in one ward and "colored" women in another ward on another floor of the hospital. "[N]o fever [appeared] among the negro patients until the white ones had been removed" to temporary maternity quarters located away from the hospital. Those facts convinced Parry the disease was, "inoculable" but not contagious. Women received through a wounded area a "septic poison from. . . the hands and clothing of the accoucheur or nurse, or. . . from the contaminated atmosphere in which she lives." This generation of anticontagionists, like the one before it, understood the communicability of puerperal fever without having to concede its contagiousness. And, according to Parry, "the means of

preventing inoculation by the accoucheur were well understood" in 1875.[29]

Private practitioners in rural areas early on defended vigorously the "doctrine of contagion."[30] Contagion explained their particular clinical experience. The haunting vision of their patients--and theirs alone--falling victim one after another to puerperal fever convinced them they functioned as an intimate link between tragedies. Doctors engaged in hospital practice, on the other hand, shared responsibility for patients with other colleagues. Contagion simply had no meaning for them, especially when one case materialized. The example of Bella is instructive. She arrived at a hospital looking forward to the birth of her illegitimate infant. She went into labor, and had a normal delivery. The doctor used no instruments. Later, he noticed "a slight laceration. . . of about one-quarter inch," but considered it trivial. The next day Bella spiked a temperature. Within 48 hours, her temperature was 105 degrees; and, when the doctor examined her that night, he discovered "for the first time some diptheroidal patches in the vagina." Throughout this ordeal,

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[29]John S. Parry, "Description of a Form of Puerperal Fever which occurred at the Philadelphia Hospital, Characterized by Diphtheritic Deposits on Wounds of the Genital Passages and by Other Peculiar Phenomena," Am. J. Med. Sci. 69 (1875): 67.

[30]Barker, Puerperal Diseases, 463.

Bella remained composed and insisted she felt "no pain." The doctor, however, experienced heartfelt pain at the sight of this 21-year old woman whom he knew to be dying. "Sitting up in bed, with no evident fear of death, which she thoroughly understood was rapidly approaching, this patient," the doctor anguished, "presented one of those spectacles so horrible to behold, and which leaves an impression time can never efface, nor diminish the dread which attaches itself to a disease so insidious and so far beyond our control."[31] The clinician's acquired expertise permits him "to construct reality as he sees fit."[32] Totally different realities existed for the private practitioner and the doctor in the hospital practice. In hospitals, contagion had little meaning. There, doctors fought bad air with antiseptics and were encouraged by the reward of preventing a wholesale slaughter of women by puerperal septicemia.

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[31]Keating, "Case of Puerperal Fever," 662-665. A discussion of supposed diphtheria-related causes of puerperal fever is available in Dorothy I. Lansing, W. Robert Penman and Dorland J. Davis, "Puerperal Fever and the Group B Beta Hemolytic Streptococcus," Bull. Hist. Med. 57 (1983): 70-80.

[32]Charles L. Bosk, Forgive and Remember: Managing Medical Failure (Chicago: University of Chicago Press, 1979), p. 85.

Regardless of which etiology they adopted, doctors found antiseptics useful in their fight against puerperal septicemia in hospitals. Hospitals provided a controllable environment and a staff to ensure a safe birth. A complex antiseptic routine could be explained to the nursing staff, for instance, by the doctor, and they would implement the instructions at the appropriate time and in the appropriate manner. A stockpile of antiseptics, anticontagionists agreed, prevented intransigent epidemics of disease in lying-in wards. For the first time, doctors could express an optimism about the safety of hospital birth.

Septic puerperal disease, in the meantime, "invaded Fifth Avenue"[33] in New York City, and challenged those who thought "this is a disease peculiar to lying-in hospitals, or large cities, or that it is confined to the lower classes and those who dwell in crowded, ill-ventilated, dirty apartments." Fordyce Barker, a well-known author and respected obstetrician, said "the same disease has been very prevalent in the city outside of the hospital, and has been proportionately more fatal among women of the upper classes, who lived under the best sanitary conditions attainable in the city." The mortality rate in single-family dwellings in New York City in the period from January 1, 1873 through May 15, 1873, was equal to that in dwellings

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[33]Mottus, New York Nightingales, p. 57.

which housed eight families. In single-family households, 13 deaths occurred from "various forms of puerperal fever," while 12 deaths occurred in the multi-family households. (In comparison, Bellevue recorded only nine deaths, and Ward's Island Hospital reported five.) In eight (politically-defined) wards with households claiming an annual income of over $5,000, puerperal disease claimed a number of victims. In the twelfth ward, for instance, ten deaths occurred, in the fifteenth ward, three deaths occurred and in the nineteenth, 17 deaths occurred. Barker hoped such figures would alert his fellow doctors to the risk of puerperal disease to women who "belonged to the better classes of this city". The mortality among those women, he claimed, was greater in 1873 than it had been "for the twenty preceding years". As he interpreted the figures, one in almost every 37 births resulted in the death of the mother from puerperal fever in one of its forms while in the less affluent areas in the city one death occurred in every 84 births.[34]

The routine carried out in a hospital proved problematic in a home. W. Gill Wylie met the challenge of preventing disease among his private maternity patients with an unusual aggressivness. He made a prenatal visit to examine the woman; and, at that time, advised the family of

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[34]Barker, Puerperal Diseases pp. 439-440; 518-521.

the need for a "large supply of napkins and bedlinen" for the birth and lying-in period. When labor began, he washed the woman's vagina with carbolic acid and began "the production of carbolic spray." After the birth, Wylie washed the woman's "external parts thoroughly with [a] solution of carbolic acid [followed by] vaginal douches from two to four times a day."[35] Such heroic efforts were pertinent, of course, only to the households of the better-off gentry. An abundant supply of clean linen was a luxury available to those who had a domestic to do the washing or could afford to send it to the laundry. A routine of daily, periodic douching demanded the presence of a live-in nurse since it is difficult to imagine a doctor dashing in every three to four hours to perform the procedure. The prevention of septicemia required fresh, clean sheets and nightgowns, vials of carbolic acid, a sprayer, the time necessary to operate the sprayer along with the appropriate skills to ensure it maintained a proper chemical mix and routine, hourly irrigations of the birth canal. Only the wealthiest, most organized, best-staffed home could meet the requirements of an antiseptic birth setting. Childbirth at home was growing more dangerous at precisely the time when the prevention of puerperal fever required increasingly complicated maneuvers and equipment.

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[35]Wylie, "Use of Antiseptics," pp. 863-864.

CHAPTER V

OBSTETRICIANS, GERMS AND THE SUSPECT HOME ENVIRONMENT

During the 1870s and the 1880s, scientists identified specific microorganisms as the cause of an increasing number of diseases, including puerperal fever. The germ theory did not enjoy immediate acceptance among obstetricians. Anticontagionists, for the most part, denied it validity. When presented with evidence of small, chain-like organisms in the blood and lochia of women with puerperal fever, those doctors claimed they represented the end product of a decomposing process and not its cause. They remained committed to the septic (chemical) origins of puerperal fever. Some thought the poisoning was the result of an internal decay of retained post-birth debris, while others claimed a septic substance introduced into a woman's body caused the decomposition of her blood. This latter group particularly obsessed over the communicability of septic influences, yet they rejected the contagiousness of puerperal fever. Science provided anticontagionists with a foundation on which to defend both their anticontagionism and etiology. At the same time, contagionists integrated into their explanation of the cause of puerperal fever

scientific evidence of the existence of atmospheric particles, germs. They were accustomed to defending bad air, miasmatic influences, as the pathogen responsible for puerperal fever, and found the idea of something in the air easily assimilated into their etiology. The anti-contagionists could never persuade those doctors that puerperal fever was strictly septicemia. Contagionists refused to adopt that notion because, according to them, septicemia was not contagious. Puerperal fever, on the other hand, was carried by the doctor from woman to woman. Contagionists together with a faction within the anticontagionist wing of the medical profession recognized themselves as carriers; but, as in the past, their individual interpretation of available scientific knowledge permitted them to disagree on the nature of the pathogen.

Doctors at odds with one another over the cause of puerperal fever, nevertheless, agreed, although for different reasons, on the utility of antiseptics in their management of childbirth. The anticontagionists pleaded for clean hands, clean instruments and a clean birth canal as a defense against septicemia. Contagionists convinced of the pervasiveness of germs encouraged the use of antiseptics based on the assumption such chemicals destroyed the small agents of disease. As their antiseptic routines became more complicated, doctors realized slowly they could not achieve the desired sterile birth environment in most homes.

While doctors awakened hesitantly to the idea that hospitals, those former "gateways to death," might represent the ideal setting for childbirth, social changes took place in America's growing cities which made some middle-class wives willing to consider having their babies in a hospital. Many of those women started married life in a small apartment; and were geographically removed from family members who, in the past, provided assistance after a baby had arrived. Now alone, urban husbands and wives realized the difficulty of insuring adequate post-natal care for themselves and their infant. Hospitals offered round-the-clock nursing; and, for this reason, became an attractive alternative to home birth. Too, at approximately the same time, the public learned about the germ theory of disease. Becoming sensitive to the role of germs in the pathogenesis of puerperal fever made home birth less attractive than hospital birth for a few urban, middle class women. With the onset of their labor pains, those women--of their own choice--went to a nearby hospital to deliver. As a few women embarked on that journey, they set in motion--with their doctor's encouragement--a changing definition of childbirth.

Lurking not far beneath the romanticization of motherhood which characterized late nineteenth-century

American middle-class culture was a stark reality: the spector of death accompanied each woman's pregnancy, labor and delivery. In the early fall of 1870, Mary R. Lewis composed a brief note testifying in a most poignant manner to that brutal fact. She was writing to a cousin advising her of the death in childbed of "our dear Sarah." Sarah delivered a fine baby at home less than a week before and, following the birth, appeared "bright and cheerful." No premonition of the family's impending tragedy dampened its happy celebration. Within days, apprehension about Sarah's obviously weakening condition transformed the spirit of the household. Ominous symptoms and signs robbed Sarah of her vivacity. The alarmed family sent for the physician who attended the baby's birth, and he called in two colleagues after appraising his patient's deteriorating condition. Their collective effects failed to bring about any noticeable improvement in Sarah's discomfort. As she sank into delerium, her husband, Alex, became disconsolate. Kneeling by her bedside, he pleaded with her to live; confessing sadly, "You saved my life, but I can't save yours." Hours proved him right. On the morning of October 22, 1870, Alex, who "lost his all in losing" Sarah, buried the mother of his first child.[1]

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[1]"The Death of a Mother after Childbirth," quoted in Gerda Lerner, ed. The Female Experience: An American

The exact cause of dear Sarah's death is not known, but it is likely she died of puerperal fever. Had Fordyce Barker been told in 1874 of the young woman's death, he would have opined, as an authority on puerperal disease, that her own blood poisoned Sarah. Barker knew "unknown blod-changes" usually attended death in childbed from a disease he labeled "zymotic." He admitted ruefully his ignorance of the "specific cause" of puerperal fever; however, his humility notwithstanding, categorizing a disease zymotic betrayed certain assumptions which Barker held about both its etiology and epidemiology.[2] Some

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Documentary (Indianapolis: Bobbs-Merrill Co., Inc., 1977) pp. 160-162.

The few studies on male sexuality have ignored completely the reality of maternal morbidity and mortality as a contributing factor to the sense of guilt men expressed about their sexual needs. Historians attribute this phenomena to either the economic or class aspirations of an upwardly mobile middle class. Avoiding carefully any mention of the other half of the sexual equation--the woman at risk to disease and death after conception--make those interpretations insensitive to male feelings of love and affection for their wives who either suffered chronic disability or died after delivering a baby. Peter T. Cominos, "Late Victorian Sexual Respectability and the Social System," Internation. Rev. Soc. Hist. 8 (1963): 18-48, 216-250; Stephen Nissenbaum, Sex, Diet and Debility in Jacksonian America (Westport, Ct.: Greenwood Press, 1980); Charles E. Rosenberg, "Sexuality, Class and Role," in No Other Gods: On Science and American Social Thought (Baltimore: John Hopkins University Press, 1976), pp. 71-88.

[2]Fordyce Barker, The Puerperal Diseases: Clinical Lectures Delivered at Bellevue Hospital (New York: D. Appleton & Co., 1874), p. 476. W. W. Hipolite, "Modus Operandi of Zymotic Agents," St. Louis Cour. Med. 11 (1884): 106-111.

years before, in 1863, the English hospital reformer, John Simon (1816-1904), reported to the Privy Council "communicable diseases. . . communicate themselves by that process which is distinctly called zymotic: in the first affected body, and by or with a specific chemical transformation of its material, there is generated or multiplied a specific zyme, contagium or ferment; which, if transferred while active to a second body, will there, according to the common law of ferments, excite the same morbid phenomena." Eight years later, Simon clarified further his definition of contagia. "Each contagium, as regards its physical form, consists of extremely minute separate solid particles," and, he went on, those particles are "living self-multiplying organic forms."[3]

When Simon described an atmosphere teeming with microscopic living things, he revealed a familiarity with the experiments of Louis Pasteur.[4] From his ongoing study of the process of fermentation, the French chemist discovered the existence of airborne, organic agents, "ferments," and became persuaded their vital activity caused

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[3]J. Simon, Public Health Reports, ed. E. Seaton 2 vols. (London: Office of the Sanitary Institute, 1887), quoted in Charles-Edward A. Winslow, The Conquest of Epidemic Disease: A Chapter in the History of Ideas (Princeton: Princeton University Press, 1943, Madison: University of Wisconsin Press, 1980): pp. 255-266.

[4]Ibid., p. 261

the fermentation of organic material. He published those conclusions in 1861 in his "Memoir on the Organized Corpuscles Which Exist in the Atmosphere;" and, within this article, challenged the prevailing theory that fermentation was the result of purely chemical (abiological) activity.[5] Simon and, after him, Joseph Lister, for example, implicated microorganisms, particles, in the pathogenesis of human disease, thereby expressing a clinician's interpretation of Pasteur's findings. Simon, a veteran observer of hospital epidemics of erysipelas, gangrene and puerperal fever, thought unseen flakes of dried pus contained the pathogens. Once assimilated into the atmosphere of a ward, disease spread rapidly from patient to patient.[6] Lister, recall, thought the particles found entry into a patient's body through the open wound of a compound fracture, then proceeded to poison the blood turning it into an irritant and causing wounds to inflame and suppurate.

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[5]Hubert A. Lechavalier and Morris Solotorovsky, Three Centuries of Microbiology (New York: Dover Books, 1974), especially Chapter 2. On the foremost proponent of the chemical nature of fermentation, Justus von Liebig (1803-1873), see Noel G. Coley, From Animal Chemistry to Biochemistry (Amersham, England: Hulton Educational Publications, Ltd., 1973), pp. 94-98. Pasteur's work is ably recounted in William Bulloch, The History of Bacteriology (Oxford: Oxford University Press, 1938; New York: Dover Books, 1979), pp. 241-252; Rene J. Dubos, Louis Pasteur, Free Lance of Science (Boston: Little, Brown & Co., 1950); and Reni Vallery-Radot, The Life of Pasteur, trans. Mrs. R. L. Devonshire (Garden City, New York: Garden City Publishing Co., Inc., 1926).

[6]Winslow, Conquest of Epidemic Disease, p. 260.

Obstetricians also believed the open wound of childbirth provided a perfect portal for the entry of a pathogen, the nature of which they still debated. Anticontagionists, citing the experimental production of septicemia in animals inoculated with septic matter, believed inoculation of similar material or an internal decomposing process which produced poisoning caused septicemia in women. Contagionists, invoking Pasteur's work, had a new notion of what they always claimed to be the real pathogen of puerperal fever: something in the air made it noxious to women in childbed. William Chamberlain explained in 1877 that "contagion consists in particles which are seeds of disease, rather than in a diffused and general contamination of the air."[7]

For obstetricians plagued with the image of a "private pestilence," the theory promised to make comprehensible the manner in which they conveyed "contagions" and it suggested, as well, what precautions doctors could take to prevent their transport. J. F. Lynch, an instructor at the College of Physicians and Surgeons in Baltimore, Maryland, informed the readers of a local medical journal in 1875, "that exceedingly minute, desiccated (sic) germs may float

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[7]William Chamberlain, "The Germ Theory of Disease," Ohio Med. & Surg. J. 2 (1877): 296-297. J. K. Crellin offers a valuable recounting of this period in "The Dawn of the Germ Theory: Particles, Infection and Biology," in Medicine and Science in the 1860s, ed. F. N. L. Poynter (London: Wellcome Institute, 1968), pp. 57-76.

upon the atmosphere or cling to our clothing. . . for months, lying in wait, as it were, perpetually, to spring into life."[8] Protecting women required constant vigilance. D. Porter Morgan, for example, maintained a remarkable vigil against the unseen pathogens carried about by him. He attributed his success as an obstetrician in Clarksburg, West Virginia to a zealous use of disinfectants. Morgan went from treating men with oozing erysipelas lesions and children with diphtheria to women in childbed, yet he "never had a case of puerperal septicemia." The enviable record reflected his routine of changing his clothes and "bath[ing] his hands, face, hair and whiskers in an antiseptic solution." Further, he placed clothing "which might have been exposed to contagion" in a cardboard box filled with chloride of lime and "dilute of hydrochloric acid to generate chlorine gas freely." After approximately an hour had passed, he removed the bundle, added more lime and acid into the box and placed his "gloves, hat, cuffs, collar, neckties, riding whip, etc." in the container. That

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[8]J. S. Lynch, "The Germ Theory of Disease," Baltimore Phys. & Surg. 4 (1875): 18; William F. Whitney, "Bacteria and their Relations to Disease," Boston Med. & Surg. J. 113 (1880): 125-127.

Gert Brieger suggests it was "natural" for a surgeon to be "one of the first to become interested in germ theory" due to his problem with postoperative septicemia and pyemia. "American Surgery and the Germ Theory of Disease," Bull. Hist. Med. 40 (1966): 144. I would like to suggest the equally "natural" interest of obstetricians in the germ theory for the same reason.

done, he again washed his hands, "forearms, face, nostrils, ears, neck, hair and whiskers in. . . a solution of chlorinated soda." Instruments were also cleaned between uses. Morgan obviously believed in the efficacy of the antiseptic principle in midwifery, and warned other doctors that failure to integrate it into their obstetric practice made them potential "carriers of contagion." Only antiseptics, he insisted, destroyed "the virus or germs of puerperal fever."[9]

By the time Morgan reported on his campaign against the germs of puerperal fever in the late 1880s, there was reason to assume they somehow caused the disease. After Pasteur discovered microorganisms in the atmosphere, other researchers found them in another habitat: the human body, particularly the female body. In 1863, C. J. Mayerhofer examined the lochia of women with puerperal fever and saw small organisms in the fluid. Three years later, Leon Coze and V. Geltz found "little bodies en chainettes" in the

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[9]D. Porter Morgan, "Antiseptics in Obstetric Practice by the General Practitioner," Trans. Med. Soc. W. Va. (1886): 313-318.

Sarah Stage claims "as late as the 1870s," doctors still refused to recognize themselves as carriers. Female Complaints: Lydia Pinkham and the Business of Women's Medicine (New York: W. W. Norton & Co., 1979), p. 88. That comment, in my opinion, lacks support. Matthew D. Mann, "Report on Obstetrics, 1875-76," Am. J. Obstet. 10 (1877): 158. In the 1870s. Oliver Wendell Holmes began to enjoy some recognition for his earlier work on puerperal fever. Barker, Puerperal Diseases, p. 462.

blood of women dying from the disease. H. G. Waldeyer, in 1872, isolated "organisms in chains [from] the uterus and in the serous exudates" of more victims. Pasteur himself, somewhat belatedly studying the role of microorganisms in the onset of disease, announced with some enthusiasm to an audience of the French Academy of Medicine in March, 1879, his "isolation and culture of the organism. . . forming the chains" from the lochia, pus and blood of various women with puerperal fever. Accepting germs as an integral element in the etiology of the disease prompted Emile Duclaux, Pasteur's assistant, to dedicate his book published in 1882, Ferments and Disease, to his wife who died in childbed, "the innocent victim of the infinitely small."[10]

When doctors aligned themselves around the zymotic or germ theory of puerperal fever, they placed themselves in direct opposition to other doctors who called the disease septicemia and denied its contagiousness. Fordyce Barker expressed impatience with the idea which "seems to have taken full possession of the medical mind." Those so

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[10]James V. Ricci, One Hundred Years of Gynecology Philadelphia: Blakiston Co., 1945), p. 19; J. M. Munro Kerr, R. W. Johnstone and Miles H. Phillips, eds. Historical Review of British Obstetrics and Gynecology, 1800-1950. (Edinburgh: E. & S. Livingstone Ltd., 1954), p. 205; Lechavalies and Solotorovsky, Three Centuries of Microbiology, p. 149, Louis Pasteur, "Septicimie Puerperale," Bull. Acad. Med. (Paris) 8 (1879): 271-274, 505-508.

possessed argued "puerperal fever, with its varied and numerous lesions, originates exclusively from the absorption of septic material into the system." Barker found the theory disagreeable for a number of reasons. First, he had observed women in childbed with distinct signs and symptoms of septicemia; but those same women exhibited none of the usual characteristics of puerperal fever. He knew, too, septicemia occurred as a sequelae to puerperal fever; that is, in conjunction with it.[11] R. J. Kinkhead thought the septicemia theory seductive, but to rely on the "beautiful simplicity of any one doctrine" failed to acknowledge the variety of women an obstetrician assisted. He reminded doctors, "we. . . deal not with. . . inorganic bodies, but with living structures, everyone varying with age and condition, no two of which are exactly alike."[12] Leonard Putzel wrote a prize-winning essay in 1875, in which he noted puerperal fever occurred before the onset of labor in some cases, making it impossible to attribute the illness to the presence of septic matter.[13] These doctors would not accept puerperal fever as strictly septicemia.

Neither would they accept the inoculation of septic

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[11]Barker, Puerperal Diseases, p. 477.

[12]R. J. Kinkhead, "Questions Relative to Puerperal Fever," Am. J. Obstet. 17 (1884): 818-838.

[13]Leonard Putzel, "Puerperal Fever," Am. J. Obstet. 8 (1875): 306-307.

matter as the sole cause of puerperal fever. They shared with the inoculators a grave concern about their ability to communicate pathogenic material to women in childbed, but their consensus ended abruptly there. Those doctors who thought in terms of the septic origins of puerperal fever denied vehemently the contagiousness of the disease. In contrast, avowed contagionists like Barker and Putzel regarded the disease eminently contagious because it was carried by the doctor. "Septicemia," Putzel proclaimed in exasperation, "has never been known to track the practice of a physician in a country district [while] the number of authentic examples on record in which an obstetrician has conveyed the poison of puerperal fever from one patient to another is almost innumerable."[14] Similarly, Barker knew of no instance "where septicemia has tracked the practice of one surgeon. . . while other surgeons in the same neighborhood did not meet with the affect. This fact alone," he insisted, was "sufficient to demonstrate that puerperal fever is not septicemia."[15] The barbed comment had little sting for the most hidebound anticontagionists in the profession, members of the so-called "German school."

The doctor of the German school derived his understanding of puerperal fever from two sources: the clinical

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[14]Ibid., 307.

[15]Barker, Puerperal Diseases, pp. 461-462.

observations of Ignaz Semmelweis and the dedication of his scientist-colleagues to the destruction of the concept of ontology in medicine. Robert Herdegen, a Milwaukee doctor, recognized Semmelweis as the first to "show puerperal fever was a septic disease." Also, according to Herdegen, he identified "the prime etiological factor [as] decomposing organic matter introduced into the circulation [and] obstetricians. . . carried the poison on their person, their clothes, their instruments and that disinfection was the great preventive."[16] Semmelweis remained a devout anticontagionist all of his life, in part, because he knew like (cadaveric poison) did not produce like (puerperal fever). His anticontagionism, if not his etiological and preventive theories, placed Semmelweis in the mainstream of German scientific thought at the time. Beginning in the 1840s, scientists such as Johannes Mueller (1801-1858) embarked on an important debunking mission. They wanted to rid medicine of the chimera of ontology; that is, diseases exist as specific entities with identifiable clinical pictures. Mueller and his students after him derided the quest for specificity; and opted instead for experimentation and exact methods to reveal the true nature of all human

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[16]Robert Herdegen, "Ignaz Philip Semmelweiss (sic), A Biographical Sketch," Am. J. Obstet. 18 (1885): 249; Junias C. Hoag, "Puerperal Fever and Its Treatment," Am. J. Obstet. 20 (1887): 828-44.

ailments. The laboratory replaced the bedside, microscopes replaced stethoscopes; and, study of the internal processes, pathological physiology, replaced observation of the patient. Mueller's student, Rudolf Virchow (1821-1902), brought the trend to a triumphal, reductionist climax. During a series of lectures given in 1858, Virchow enunciated his theory of cellular pathology. Inflammation, he said, occurred with an irritation of the cell. Following this logic, inflammation of the peritoneum, for instance, did not result in the specific disease of peritonitis; rather, it represented the simple reaction of the cells of the peritoneal tissue to an irritating force, the nature of which he was unsure. When Virchow announced that cells formed from pre-existing cells and located the origins of all disease at the cellular level, he realized a longstanding goal of German science. Medicine no longer need concern itself with ontology. There were no specific diseases. According to Virchow, "disease was nothing but life under altered conditions."[17] Such conditions could not be considered contagious.

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[17]Knud Faber, Nosography in Modern Internal Medicine (New York: Paul B. Hoeber, Inc., 1922), especially Part 3, pp. 59-75; Esmond R. Long A History of Pathology (New York: Dover Books, 1965; originally published 1928), especially Chapter 9; Rudolf Virchow, Cellular Pathology, 2nd ed., trans. Frank Chance, Introduction by Leland J. Rather (Philadelphia: J. B. Lippincott, 1863; New York: Dover Books, 1971); Erwin H. Ackerknecht, Rudolf Virchow: Doctor, Statesman,

In the 1870s, the germ theory of disease was still an unproved speculation. It was one thing to contend, as Lister did, for example, minute particles in the air caused human flesh to inflame and suppurate, and quite another problem to explain how those organisms actually "worked." This lacunae influenced particularly the attitudes of clinicians accustomed to thinking in terms of the septic origins of puerperal toward the veracity of an etiology based on the influence of atmospheric germs. Semmelweis dismissed all of the talk about airborne pathogens. To him, "atmospheric conditions neither create[d] decaying organic matter no convey[ed] it to potential victims."[18] The supposed role of microorganisms provoked a discussion at a meeting of the New York Obstetrical Society in 1873. One member reported on the discovery of "vegetable parasites . . . in the blood of septicemia cases, and that [their] presence in the blood must be taken as the particular cause of the symptoms of septicemia."[19] E. R. Peaslee found the assumption

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Anthropologist (Madison: University of Wisconsin, 1953), Walter Pagel, "Speculative Basis of Modern Pathology," Bull. Hist. Med. 18 (1945): 1-43; Owsei Temkin, "Concepts of Ontogeny and History in Germany Around 1800," Bull. Hist. Med. 24 (1950): 227-246; George Rosen, "Romantic Medicine," Bull. Hist. Med. 25 (1951): 149-158.

[18]Ignaz Semmelweis, The Etiology, Concept and Prophylaxis of Childbed Fever, trans. K. Codell Carter (Madison: University of Wisconsin Press, 1983; originally published, 1860), p. 38.

[19]"Transactions of the New York Obstetrical Society," Am. J. Obstet. 6 (1873): 274.

questionable. Peaslee earned a reputation as a creative gynecological surgeon; and his ability to prevent septicemia in patients following their surgery contributed to the esteem he enjoyed. His reluctance to accept parasites as essential to the morbid condition of the blood derived from his considered opinion that "no natural element of the blood can produce septicemia without being previously decomposed."[20] J. W. Frankl agreed. He thought the pathogen of septicemia the "decomposing secretions of the wound," and found it illogical to assume "bacteria per se" caused blood poisoning.[21] Another gynecological surgeon, Albert H. Smith, thought the presence of microorganisms merely an "epiphenomenon." They were an artifact of decomposition, not its cause.[22]

The doctors who questioned the nascent germ theory of human disease in the 1870s are not easily dismissed as conservative defenders of the status quo when the array of contradictory evidence is recalled. Pasteur and others identified a microorganism found in chains, and claimed it

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[20]E. R. Peaslee, ibid., 268.

[21]F. W. Frankl, "A Study on the Etiology of Puerperal Disease," Am. J. Obstet. 11 (1878): 363.

[22]Albert H. Smith, "The President's Address: The Present Aspect of the Puerperal Diseases," Trans. Am. Gynec. Soc. 9 (1884): 57, 60; Charles H. Cook, "Pyemia of Doubtful Origin; Apparently 'Spontaneous,'" Boston Med. & Surg. J. 113 (1880): 79.

caused puerperal fever. At the same time, other scientists proved the organisms to be innocuous. They concluded "bacterial organisms only increase the activity of the [septic] process after it has once been started."[23] When subsequent investigations showed the blood of healthy women contained germs while the blood of women with puerperal fever revealed none at all, the discussions about the theory resonated with disbelief.[24] Doctors attending the Section on Sanitary Science of the International Medical Congress held in Philadelphia in 1876 passed a motion which contrasted sharply with the ideas being espoused at the same meeting by the chair of the Section on Surgery, Joseph Lister. The motion stated simply, "there is not satisfactory proof that "septicemia, pyemia, puerperal fever [or] erysipelas. . . are necessarily connected with minute vegetable organisms."[25]

Doctors who might have conceded a probable role of germs in cases of "infectious" puerperal fever, nevertheless, knew from experience that the "non-infectious" case of

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[23]Putzel, "Puerperal Fever," 302.

[24]Frankl, "Etiology of Puerperal Fever," 350; Barker, Puerperal Diseases, p. 349; Carl Lomer, "Our Present Knowledge of the Relations between Microorganisms and Puerperal Fever," Am. J. Obstet. 17 (1884): 679, 683.

[25]Transactions of the International Medical Congress of Philadelphia, 1876, ed. John Ashworth (Philadelphia: Printed for the Congress, 1876), p. 39.

the disease resulted for entirely different reasons. Years of experience both in private practice and at Bellevue offered William T. Lusk ample opportunity to observe both types. The infectious he considered highly contagious and spread through the atmosphere from woman to woman causing symptoms of blood poisoning in each of them. The non-infectious type appeared spontaneously; and, according to the doctor, the victim exhibited no symptoms of blood poisoning. He attributed the inexplicable attack to "traumatic injuries" sustained during the labor and to the "imprudence of [the] patient." One woman, for example, contracted "pelvic peritonitis" because she got out of bed to use the bathroom while "dripping with perspiration and clad only in a nightdress [and] barefooted." Non-infectious puerperal fever also suggested a moral cause, not a biological one. As Lusk pointed out, of the 240 married women who came to the hospital to give birth, only two died from puerperal fever. Thirteen of 209 unmarried women died. When single and pregnant Mary "entered the hospital. . . to conceal herself from. . . friends," she failed to elude a sister who found her and proceeded to create such a disturbance the police were called to forcibly remove her. Shortly thereafter, poor Mary "became maniacal, developed symptoms of peritonitis and died." In certain instances, doctors simply did not need a bacteriological explanation

for puerperal fever.[26]

T. Gaillard Thomas attributed infectious puerperal fever to a "poison" which "act[ed] as rapidly and decidedly as a little yeast acted to dough." He had often left a woman's bedside only to discover her a "few hours later" complaining of chills, pelvic pain and a headache. Thomas recognized the seriousness of the condition when "a look of indescribable anxiety" fell across the woman's face. He believed the "poisonous element [was] carried through the atmosphere and. . . by the fingers of the doctor or nurse, towels and cloths laid against the vulva, sponges, instruments and by bed and body clothing coming an immediate contact with the genital organs." To counteract such a pervasive "element," everything must be disinfected, including the woman's birth canal. The latter procedure was the least reliable, Thomas warned. He recommended "using the fingernail as a curette" to confirm the uterus contained in debris."[27]

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[26]William T. Lusk, "The Genesis of an Epidemic of Puerperal Fever," Am. J. Obstet. 8 (1875): 371; William T. Lusk, "On the Nature, Origin and Prevention of Puerperal Fever," in Transactions of the International Medical Congress of Philadelphia, 1876, ed. John Ashworth (Philadelphia: Printed for the Congress, 1877), p. 832; and, Robert Barnes, "On Antiseptic Midwifery and Septicemia in Midwifery," Am. J. Obstet. 15 (1882): 56.

[27]T. Gaillard Thomas, "The Prevention and Treatment of Puerperal Fever," Am. J. Obstet. 17 (1884): 279-281.

Thomas was not along in his skepticism about the usefulness of uterine irrigations. Other doctors were reluctant to use such an invasive technique for a variety of reasons. The very apparatus needed to perform the procedure became suspect as an inanimate "conveyer of contagion."[28] Too, "germs [might] be conveyed into the vagina by the nozzel of the syringe, or by the unintentional admission of air."[29] C. C. P. Clark, an Oswego, New York doctor, lashed out against the practice. "We are," he wrote in 1884, "now told to direct a female nurse (for if we do it ourselves, we must shame the very plumber in our bills) whose native incapacity and inexactness no amount of training can much help, several measured and at a temperature that no thermometer can always tell the suitableness of, a flood of liquid, medicated, I care not how, upon and into the most sensitive organ of the human body, now strained, wounded and sore. Of all the many forms of meddlesome midwifery," he claimed, "this appears to. . . be the worst.[30] Doctors with less of a flair for colorful

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[28]"Quarterly Report on Obstetrics," Am. J. Obstet. 8 (1875): 189.

[29]Henry D. Fry, "The Value of the Antiseptic System in Private Obstetric Practices; Conclusions based on a Study of the Puerperal Temperature," Am. J. Obstet. 19 (1886): 348.

[30]C. C. P. Clark, "Uterine Injections for the Parturient," Am. J. Obstet. 17 (1884): 1026-1035.

language agreed with the underlying concerns of Clark. Many considered the uterus healthy, and thought irrigations gratuitous. Any "effort of rendering the uterus aseptic by artificial means was like refining pure gold"[31] according to one obstetrician. Practical considerations also mitigated the continued use of uterine irrigations. Porter Morgan thought them ill "adapted to private obstetrical practice." Like Clark, he thought the "details" and the personnel required to perform injections on a regular basis made them "impracticable (sic) to a very great extent in private practice."[32] Over time, doctors chose to concentrate their efforts on the external use of antiseptics. This decision influenced their evaluation of the safety of home birth in years to come.

During the late 1870s and then thereafter, a new generation of German scientists found themselves in conflict with their scientific heritage. Unlike Virchow, these researchers performed experiments which pointed to the specificity of disease. From their laboratories came evidence of the relationship between specific identifiable microorganisms and specific disease states. Robert Koch

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[31]Simon Baruch, "Practical Observations on Aseptic and Antiseptic Midwifery," Trans. So. Carolina Med. Assn. (Charleston), 1888, 104; Dr. Ingham, "Case of Puerperal Septicemia," Am. J. Obstet. 7 (1874): 162-163.

[32]Morgan, "Antiseptics in Obstetric Practice," 317.

(1843-1910) spearheaded this revolution. In his makeshift laboratory between the years 1876 and 1880, the physician "establish[ed] the basic principles of medical bacteriology." He isolated the Bacillus anthracis as the causative agent of anthrax (1877). In 1880, he went to work for the Imperial Health Office; and his "students" included Friedrich Loffler who identified the organism of diphtheria (1884). Koch published an article in 1881 which described the methods used by him to establish the parasitic cause of disease. "On the Study of Pathogenic Microorganisms" contained the now famous Koch's postulates. To determine if a specific germ caused a specific disease, the germ must be found consistently from different persons with the disease, it must be isolated from a lesion of that disease, must reproduce the disease in an animal inoculated with it in pure culture and it must be found again in the lesions of the artificially produced disease. A year later, in 1882, Koch demonstrated to members attending a meeting of the Berlin Physiological Society how those standards permitted him to identify the bacillus responsible for tuberculosis. A full-length article describing the experiment, "The Etiology of Tuberculosis," appeared in 1884. The next year, Koch was appointed Chair of Hygiene at the University of Berlin. One of his first students came from Japan. Shibasaburo Kitasato later isolated the tetanus bacillus in 1889. "By 1892, members of the Koch school had isolated

also the agents of erysipelas, glanders, acute lobar pneumonia and epidemic cerebrospinal meningitis."[33]

The work done by Koch and others helped establish the biological origins of certain diseases. It had not explained by the 1880s exactly how the germs caused disease, how they performed their mischief. On the other hand, it had become extremely clear to many obstetricians that antiseptic practices prevented puerperal disease. In 1888, George H. Lee, a resident at the Charity Hospital in New Orleans, reported a program of antiseptic and aseptic routines resulted in "far less anxiety for the medical attendant, very much less trouble for the nurse [and] wonderfully less morbidity and no mortality in the puerperae." During the previous summer, the prevalence of disease in the lying-in wards was "fearful." Rather than close the wards, doctors began a system of "antiseptic midwifery" in the white wards. They adopted the routines used at the New York Maternity Hospital by H. J. Garrigues and by W. L. Richardson at the Boston Lying-in Hospital.

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[33]Lechavalier and Solotorovsky, Three Centuries of Microbiology, particularly Chapter 3.

For an interesting discussion on the effects of the rules set down for scientists by Koch's criteria for establishing the bacteriological cause of disease see Lester S. King, "Dr. Koch's Postulates," J. Hist. Med. & Allied Sci. 7 (1952): 350-361 and A. S. Evans, "Causation and Disease: The Henle-Koch Postulates Revisted," Yale J. Biol. & Med. 49 (1976): 175-195; and, for remarks by a contemporary Smith, "President's Address," 57.

Every precaution taken at the Charity Hospital was predicated on the assumption of a heterogenetic cause of puerperal septicemia, and the belief that preventing the introduction of the "poison" or, at least, its immediate destruction "after it finds lodgement" precluded disease among women in childbed. Therefore, deliveries took place in a thoroughly ventilated room, in a clean bed with "an antiseptic pad." Further, "all bacteria [were] removed from the genitalia before labor." Doctors approached women with clean, "surgically clean," hands and disinfected instruments. George H. Lee, a resident at the hospital, reported with pride the mortality from septicemia dropped from almost ten percent to only "one case of septic fever and no deaths from sepsis."[34] A year later, further north, at the Cook County Hospital in Chicago, a similar program of antiseptic midwifery went into effect. Doctors there wore "a clean white frock," washed their hands, and cleaned their fingernails. The woman received upon admission a "general bath" and a "bichloride bath," and fresh, clean clothing.

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[34]G. H. Lee, "Antiseptic Midwifery in the Charity Hospital, New Orleans," New Orleans Med. & Surg. J. 16 (1888): 524-536. See, too, Stella O'Connor, "The Charity Hospital of Louisiana at New Orleans: An Administrative and Financial History, 1736-1941," Louisiana Hist. Quart. 31 (1948): 5-109. According to Lee, the "colored" wards remained relatively free of the disease for some unknown reason. For similar comments, Joseph Taber Johnson, "On Some of the Apparent Peculiarities of Parturition in the Negro Race, with Remarks on Race Pelves in General," Am. J. Obstet. 8 (1875): 88-123.

When her labor began, nurses "prepped" the woman, washing the vaginal area with soap, water and carbolic acid. After the birth, she went into a specially designated confinement area clad only in a clean "chemise." She rested on a bed with clean linen in a "fumigated" room. Nurses replaced stained sanitary pads every six hours, and only authorized personnel entered the ward. All doctors were told to avoid "contagious wards." Too, none of them could "assist in any practical pathological research."[35] The elaborate precautions, the insistence upon absolute cleanliness and disinfection of everything and everyone who came into contact with the woman before and after delivery along with the special regard for the hygiene of the patient herself paid handsome dividends. The mortality from puerperal fever in hospitals dramatically decreased all over the country. "Under the impulse of Lister's work a new era dawned upon obstetrics [and] the statistics of mortality [in hospitals] compare[d] most favorably with those of private practice."[36]

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[35]T. E. Roberts, "Aseptic Precautions Observed in the Obstetrical Ward of Cook County Hospital," Med. Era 7 (1889): 103-104; and, in Philadelphia, Charles P. Noble, "Antiseptic Midwifery as Practiced in the Philadelphia Lying-in Charity," Med. & Surg. Reporter 58 (1888): 397-398; in Indiana, H. S. Bell, "The Use of Antiseptics in Obstetric Practice," Peoria Med. Month. 5 (1884-5): 72-80.

[36]Hoag, "Puerperal Fever," 838.

The public, in the meantime, learned about germs and their responsibility for disease from a number of different sources. Erwin Frank Smith (1854-1927), a self-educated botanist, eventually wrote a three volume work, Bacteria in Relation to Plant Diseases, the last book appearing in 1914. Before that, his early interest in the germ theory prompted him to create a special "scientific and sanitary department" in the journal to which he contributed regular articles, the Michigan School Moderator. His pieces on both Pasteur and Koch in the early 1880s introduced a readership of high school teachers to the work of those two pioneering scientists.[37] Promoters of "domestic science" tracts popularized the germ theory for homemakers. In 1885, Mrs. H. M. Plunkett laid a grievous burden on the readers of her Women, Plumbers and Doctors; or, Household Sanitation. To remain ignorant of scientific developments, she charged, would one day place women "beside the still form of some previous one, slain by one of the preventable diseases that, in the coming sanitary millenium, will be recokoned akin to murder.[38] Destruction of life-

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[37]Lechavalier and Solotorovsky, Three Centuries of Microbiology, pp. 170-171; A. D. Rodgers III, Erwin Frink Smith: A Story of North American Plant Pathology (Philadelphia: Philosophical Society, 1952).

[38]Barbara Ehrenreich and Dierdre English, For Her Own Good: 150 Years of the Experts' Advice to Women (Garden City, New York: Anchor Press/Doubleday, 1978; Anchor Books, 1979), p. 159.

threatening germs elevated the monotonous drudgery of housework into the equivalent of moral self-defense. Woman's hygenic mission was clear now that her home had become a suspect environment.

As the public became aware of the home as a habitat for disease-causing germs, hospitals improved their image as lying-in centers. While it is true those institutions "offered patients no medical advantages not available in the home" in the 1870s,[39] the same could not be said of the institutions a decade later. By the late 1880s, hospitals in various cities became free of puerperal fever. The success of antiseptic midwifery, indeed, suggested strongly the disease could at last be prevented. A ritualized use of antiseptics, the enforcement of standards of cleanliness for all attendants and the hygenic protocol surrounding the pre-

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[39]Morris J. Vogel, The Invention of the Modern Hospital: Boston, 1870-1930 (Chicago: University of Chicago Press, 1980), p. 9. I am struck by the class bias revealed in Vogel's remark. Certainly, the urban poor lived in conditions which made aseptic surgery and childbirth nearly impossible and, therefore, risky for the patient. I suggest a typical tenement with "a row of privies whose floors were slippery with urine and whose seats [were] foul with abominable matter," did not compare favorably with the cleanliness of hospitals. George C. Booth, Forty-first Annual Report of the New York A. I. C. P., 1884, quoted in Robert H. Brenner, From the Depths: The Discovery of Poverty in the United States (New York: New York University Press, 1956; New York: New York University Press Paperback, 1967), p. 7. Oscar Handlin brings to life the experiences of the urban poor in Boston's Immigrants, 1790-1880 (Cambridge: Harvard University Press, 1941; New York: Atheneum, 1969).

and post-delivery care of the mother was achieved with some difficulty in hospitals, but it was accomplished with persistence on the part of doctors who respected the anti-septic principle. Achieving an identical level of disinfection, an aseptic environment, in most homes was less easily accomplished.

A slow but perceptible trend toward the urbanization of American society took place after the Civil War. By the late 1880s, city-dwelling young-marrieds usually started housekeeping in one of the many apartment buildings which replaced houses for the trendsetting urbanites. Unlike previous generations of couples who started married life living with parents, this couple lived alone. Parents and family members were usually many miles away if not in different towns or even states. The young wife probably worked outside of the home--in an office, in a library. Her idealized portrait appeared in magazine advertisements for canned soup, laundry soap and complexion cream. Her ability to join the work force was enhanced by the bakeries which provided bread, the ice man who delivered and stores stocked with ready-to-wear clothing. She, unlike her mother, no longer had to bake bread, plant a garden, make her clothing

or even do her own laundry.[40] Like her mother, though, she got pregnant.

Preparing an aseptic birth environment in a small apartment took physical labor and a supply of equipment and linen. Gaillard Thomas insisted upon the same standards of cleanliness for a home birth as those he could demand for a birth in a hospital. He wanted the floor and ceiling of the future lying-in room washed with carbolic acid, the "bedstead and mattress [sponged] with the same solution" and all window coverings and upholstered furniture removed before the delivery. Before he arrived to assist at the birth, Thomas made sure his clothing and that worn by the nurse who accompanied him was "free from exposure to the effluvia of septic infection, such as. . . erysipelas, septicemia, scarlet fever" and so forth. Any hint of such contamination required a complete change of clothing and a sponge bath in "boric acid." Immaculately clean hands went without saying. Throughout the labor, the nurse kept a "napkin wrung out of [carbolic acid] over the genitals until the birth." Finally, "tak[ing] nothing for granted, [Thomas] carefully examined the vulva of the patient for any

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[40]These changes are ably recounted by Sheila M. Rothman, Woman's Proper Place: A History of Changing Ideals and Practices, 1870 to the Present (New York: Basic Books, Inc., 1978), especially pp. 13-21. On the changing urban ecology, see Vogel, Invention of the Modern Hospital, particularly Chapter 5, "Hospitalizing the Middle Classes," which informs my analysis above.

tears or small lacerations."[41]

Creating an aseptic environment for birth was a difficult undertaking for both the patient and her doctor who realized it was one thing to outline the essentials and another to provide them in the best of homes. It is not impossible to imagine the young, urban mother-to-be, nine months pregnant climbing a ladder to wash ceilings or down on her knees scrubbing floors with a harsh chemical, but it strains credibility. She might have preferred to hire a domestic to prepare the small bedroom for a birth. Without the wife's salary, though, the family budget was probably more stringently budgeted since a single income would soon have to provide for three. So, perhaps, the father-to-be did the necessary cleaning, gathered supplies and made sure a supply of clean linen would be on hand. At any rate, the precautionary preparations were required to ensure a hospital-like aura in the bedroom of their compact apartment. Adequate disinfection of a home proved problematic too for obstetricians. Even the most conscientious doctor, Porter Morgan, for instance, complained no one "tells us of a simple, inexpensive and ever ready disinfectant or antiseptic or how to apply it."[42] Even

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[41]Thomas, "Prevention and Treatment of Puerperal Fever," 282.

[42]Morgan, "Antiseptics in Obstetric Practice," 316.

those who "never fully came to grasp the significance of bacteria in disease" recognized, nevertheless, the urgent need for antiseptic obstetrics. R. B. Pusey got the "first inkling of the bacteriology of infection in the early 1880s," while practicing in Elizabethtown, Kentucky, a settlement of about 15,000 population in Hardin County. There was no running water or a sewerage system. The best Pusey could do to protect his patients in childbed was to wash himself and clean the women with a "bichloride of mercury solution."[43] Some doctors, of course, disregarded the need for a complex antiseptic use and aseptic routine. Gaillard Thomas charged them with "a laxity of system and a carelessness with regard to preventive measures that border[ed] on criminality."[44] Obstetricians exhibiting a cavalier attitude toward cleanliness, though, put their livelihood in jeopardy. Porter Morgan warned fellow practitioners that patients were, as he put it, "wide awake and. . . quite intelligent on the subject," and women "frequently asked if he had recently attended. . . a

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[43]William Allen Pusey, A Doctor of the 1870's and 80's (Springfield, Ill.: Charles C. Thomas, 1932), pp. 11, 78, 105-106. Pusey received his education at the Jefferson Medical College in Philadelphia where Charles D. Meigs was the instructor of obstetrics.

[44]Thomas, "Prevention and Treatment of Puerperal Fever," 281.

contagious disease."[45] If the woman or her family believed the doctor had failed to provide adequate protection against disease, they sued him for malpractice. This was especially true when they suspected "the obstetrician convey[ed] septic poison from one case to another."[46] Home birth began to present some problems. For the doctor who lacked a documented, uniform antiseptic procedure to follow, it was a matter of doing what he could under the conditions. Should the patient determine later that he had not done enough, she charged him with incompetence. For the potential patient, an antiseptic environment required preparation and hard work; and, after the baby came, trying to care for it without assistance. This meant, often enough, lost pay for the father who stayed home to help. Patients and doctors looked at the hospital with an eye toward alleviating many of the problems which attended their mutual recognition of the need for a clean, sterile birth setting.

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[45]Morgan, "Antiseptics in Obstetric Practice," 316.

[46]J. W. Underhill, "The Female Generative Organs in the Medico-Legal Relations," Am. J. Obstet. 12 (1879): 93. Expressions of concern over the increase in malpractice suits are found in D. Miller Barr, "General Use of Anesthetics in Labor," Am. J. Obstet. 13 (188): 390-394; Bell, "The Use of Antiseptics," 75; Hoag, "Puerperal Fever," 829.

The unrestrained use of antiseptics during the 1880s betrayed the variety of opinions held by the medical profession about the cause of puerperal disease. While a nascent germ theory prompted doctors' use of antiseptics, it was by no means indicative of their conversion to a bacteriological explanation of disease. Their experience taught them otherwise. They knew of cases for which the emotional distress of the patient clearly prepared her for the onset of illness. Septicemia provided yet another cause of puerperal disease. Those doctors regarded decomposing matter as the sole pathogen, and discounted the existence of the tiny microorganisms as nothing but the end product of decomposition. As they envisioned the process, a wound became infected first and then microbes appeared. The one area in which these otherwise opposing practitioners could meet in agreement was on the use of antiseptics. The sporadic, isolated case of puerperal fever in a hospitalized patient who suffered from mental stress could trigger an epidemic. Once the woman was stricken, she, through her exhalations, contaminated the air around her. The airborne zymes or particles released into the atmosphere put other women at risk to the ill effects of those contagia in the air. A liberal use of antiseptics on the doctors' hands, instruments, linen and the patient, particularly on her open wound, appeared to prevent puerperal disease in hospitals. Obstetricians who disbelieved in the airborne transfer of

disease-causing particles also used disinfectants, but for an entirely different reason: to counter the effects of septic matter carried about on their hands, instruments and clothing after being exposed to and touching the suspect fluids and matter. Divergent opinions about the cause of disease in childbed sponsored the use of antiseptics.

The results of a liberal use of disinfectants in hospitals among maternity patients pointed clearly to the benefits of asepsis. Those institutions where doctors practiced aseptic midwifery became free of disease. At about the same time, middle class women residing in urban areas with hospital facilities began to view them as a haven for childbirth. Not only were hospitals shedding their traditional reputations as pesthouses, they were in the process of creating a positive image as birth centers. Adequate staff and supplies to ensure an aseptic environment together with nurses to care for both the mother while she recovered and the newborn infant also enhanced hospitals as an alternative birth setting. The difficulties of home birth were exaggerated, too, in the minds of a public learning about the germ theory of disease. Media interpretation of scientific evidence challenged homemakers to free their homes of germs at a time when no one understood exactly where germs might lurk or how they caused disease. Respect for their pathogenic nature, nevertheless, led domestic scientists to define a worthy goal for women.

Women, alone, could make their homes germ-free. This responsibility was made more onerous when a woman expected to give birth in a now suspect environment. Her decision to enter a hospital was encouraged, then, by the knowledge that germs somehow contributed to disease and the writings of female experts on the hazards of any standard of housekeeping which did not approximate perfection. Those standards were more easily met by a hospital staff.

Doctors, too, proud of their battle against puerperal disease, were less hesitant to admit their middle class patients into a maternity ward. Regardless of what they thought caused puerperal disease, they knew antiseptics helped eliminate it. Their disagreements over the cause, in fact, continued well into the turn of the century. As the germ theory emerged to take its eventual place as the dominant etiology, the initial unanswered questions it encouraged among physicians helped fracture the bonds of one self-conscious group of alternative healers, the homeopaths.

CHAPTER VI

TOWARD THE HOSPITALIZATION OF CHILDBIRTH: HOMEOPATHS, GERM THEORY AND ANTISEPTIC OBSTETRICS

In the early part of the 1890s, Joseph Lister received enthusiastic praise from members of the homeopathic medical community. Lister, one doctor stated unequivocably, "has done more for. . . obstetrics than any other man who ever lived."[1] Many of his colleagues shared a similar respect for the British surgeon, believing "the stream of antiseptics has washed away forever the awful epidemics of puerperal fever."[2] Even as those doctors promoted antiseptic midwifery, many of their fellow homeopaths remained skeptical about the value of antiseptics and critical of the unrestrained use of chemicals both during and after a woman's labor and delivery. This conflict between practitioners who otherwise prided themselves on a mutual commitment to specifically defined therapeutic

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[1]Sheldon Leavitt, "Discussion," Homeop. J. Obstet. 14 (1892): 487.

[2]W. H. Hanchett, "Practical Midwifery," Homeop. J. Obstet. 17 (1895): 395; Thomas L. MacDonald, "Discussion," ibid., 490.

regimens revealed their individual response to pressures both internal to and external to a self-conscious group of healers. For homeopaths (as well as other doctors), the 1890s represented an epidemiological interregnum. The germ theory of disease began its ascent as the dominant etiology, but it competed with older notions about the septic origins of puerperal fever. Although separated by this disagreement over what constituted the exact pathogen of the disease, whether decomposing material or microbe, this particular group of homeopaths used antiseptics as part of their management of childbirth. The decision put them at odds with the more traditionally-minded members of their sect who denounced the trend toward a liberal use of chemicals among doctors who had historically identified their therapeutics by its emphasis on the healing power of nature. Minimal artificial interference with that normal, intrinsic recuperative capability had long been the hallmark of homeopathy. By the 1890s, defenders of the homeopathic tradition could also invoke the power of science to substantiate their concern about maintaining the integrity of their approach to healing. Researchers had discovered what they believed to be the natural ability of the host to defend itself against disease-causing invaders. In an earlier period, a shared epidemiology permitted conflicting opinions about the prevention of puerperal fever. As the nineteenth century drew to a close, homeopaths caught between the decline of

older theories and the emergence of a new one which threatened the foundation of their philosophy had even more cause to debate openly with one another the value of antiseptic chemicals in obstetrics.

Conflicts among homeopaths over antiseptic midwifery reflected each doctor's prerogative to interpret scientific evidence against his clinical experience. The exigencies of a particular doctor's practice, in other words, sustained their disagreements. Homeopaths practiced throughout the United States, in different geographical locations, in rural areas, in cities and in different neighborhoods of the same city. An antiseptic routine established in a homeopathic hospital could not be replicated in the variety of homes in which birth took place, and the insistence upon the need for a sterile environment placed an almost impossible burden on some homeopaths in private practice. Too, they contended with the preconceptions of their patients about the management of labor, delivery and the lying-in period. Certain groups of women had definite beliefs about the ritual, and they limited what the doctor could do with antiseptics. Proposals to innovate traditional birth practices met with numerous stumbling blocks. No innovation could satisfy either the needs of a pluralistic homeopathic medical community or the diverse needs of its equally heterogeneous patient population. Examining the troubled path of antiseptic obstetrics within divided but nevertheless self-

conscious group suggests in microcosm the social and scientific variables which constrain widespread adoption of an innovation in traditional medical practice. It illuminates, as well, how, out of this exchange, there emerged the first hint of prejudice among doctors for hospital birth.

Medical philosophy and therapeutic technique set homeopaths apart as a distinct group of healers in America. Homeopathy was the brain child of a German physician, Samuel Christian Hahnemann (1755-1843) who found fault with the therapeutic regimen taught him as a student in Vienna in the late eighteenth century. At that time, bleeding represented the therapy of choice for most of the profession as did the use of various chemicals designed to purge the patient's body of deleterious influences. Hahnemann became interested in the study of the effects of various chemicals on the system, and embarked upon a career as an experimental pharmacologist. After performing various experiments with one of the few known specifics for disease, cinchona, for the treatment of fever, he began to formulate a fundamental principle of homeopathy, <u>similia, similibus, curantur</u> (like cures like). After ingesting some cinchona and recording its somatic effects, the doctor "reasoned that cinchona produced. . . fever." Therefore, Hahnemann

concluded "disease could be cured by drugs which produced in a healthy person the symptoms found in those who were ill." From that tenant, he went on to explain in vitalistic terms how drugs "worked." They enhanced the natural ability of the body to fight illness; and, he reasoned, the heroic dosages then in fashion interfered with the process of recuperation since patients often became more debilitated after receiving treatment. Hahnemann then arrived at the second premise of homeopathy, the law of infinitesimals. Simply stated, he believed "the smaller the dose the more effective in stimulating the vital force." Extremely small dilutions of a single drug (down to 1/500,000th of a grain) eventually became a recommended dose. By 1810, Hahnemann put together his ideas in a book, the Organon of Homeopathic Medicine. His theories became popular in Europe; and, when he died in 1843, Hahnemann was a successful, well-known physician. Converts to homeopathy in America, Constantine Hering, for example, attracted doctors from the ranks of the so-called "regulars." The English translation of Hahnemann's books generated more interest among physicians here; and, by 1844, they established the American Institute of Homeopathy. The successful transplanting of a European medical philosophy required the acceptance of patients, and they, indeed, welcomed the gentle therapy made available to them by homeopaths. Instead of harsh emetics and heroic bleeding to syncope, the sick and ailing were

prescribed a vial of a more palatable, diluted drug.[3] By 1879, the inaugural issue of the Homeopathic Journal of Obstetrics and Diseases of Women and Children inspired the editor to note with pride that approximately "seven thousand physicians in the United States practice medicine scientifically."[4]

Like most respectable physicians in the late nineteenth century, homeopaths did not limit their practice. As general practitioners, they confronted that "most dreaded of all disease," puerperal fever.[5] Prompted by its "always unfavorable" prognosis,[6] homeopaths discussed with varying degrees of enthusiasm the preventive possibility of the antiseptic technique developed by Joseph Lister. Some

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[3]Martin Kaufman, Homeopathy in America: The Rise and Fall of a Medical Sect (Baltimore: Johns Hopkins Press, 1971), pp. 23-29. William G. Rothstein also provides a useful discussion of homeopaths, American Physicians in the 19th Century (Baltimore: Johns Hopkins Press, 1972), especially chapters 8 and 12.

[4]Henry Minton [?], "Salutatory," Homeop. J. Obstet. 1 (1879): 62.
The Index-Catalogue of the Library of the Surgeon-General's Office lists two American homeopathic journals devoted to obstetrics: American Journal of Obstetrics and Gynecology and the Homeopathic Journal of Obstetrics, and Diseases of Women and Children v. 6 (Washington, 1885), pp. 326-331. The latter changed its name to Homeopathic Journal of Obstetrics, Gynecology, and Pedology in 1887, hereafter cited as Homeop. J. Obstet.

[5]J. M. McClatchey, "The Use of Medicated Injections per Vaginum After Parturition," Homeop. J. Obstet. 4 (1883): 263.

[6]W. J. Martin, "Puerperal Fever: History and Etiology," Homeop. J. Obstet. 9 (1887): 40.

of the doctors adopted antisepsis almost immediately upon learning of the surgeon's routine application of carbolic acid to open wounds. They attempted "absolute surgical cleanliness" of themselves and the lying-in rooms they visited.[7] Before examining a woman, homeopaths washed their hands and arms, cleaned their fingernails and rinsed thoroughly with "carbolized water."[8] They insisted upon fresh bed linen, a "frequent change of [the patient's] clothing [and] fresh napkins while bed pans and all other utensils were rinsed with chemically treated water.[9] Homeopaths also flushed their patients' vagina and uterus with solutions of carbolic acid. Enthusiasts claimed Lister's technique would banish puerperal fever, a claim which other homeopaths received with skepticism. Refusing to be seduced by what they felt was an undeserved extravagant belief in antiseptics as the only possible preventive of puerperal fever, they argued that because the disease was "not due to any single, simple cause, [it could not] be effectively guarded against by a single precaution. [10]

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[7]S. F. Betts, "Antisepsis as Applied to Pelvic Surgery and Obstetrics," Homeop. J. Obstet. 6 (1884): 125.

[8]J. B. McClelland, "General Treatment," Homeop. J. Obstet. 9 (1887): 55.

[9]H. E. Spaulding, "Puerperal Septicemia and Antiseptic Midwifery," Homeop. J. Obstet. 5 (1883): 46.

[10]Martin, "Puerperal Fever," 49.

The different assessments placed on the value of antiseptic midwifery by homeopaths made it by 1887 "one of the live medical questions of the day."[11] In 1892, the topic virtually burst into the pages of the Homeopathic Journal of Obstetrics. The diversity of opinions expressed in the publication revealed distinct areas of tension within a group previously proud of its commitment to a unique approach to the practice of medicine.[12]

Etiological differences informed the conflicting evaluations of antiseptics. While most homeopaths accepted the diagnosis of puerperal fever as septicemia, "blood poisoning," they did not agree on what poisoned the blood or from where it came. Some believed women absorbed an internally produced "poison [from] putrefying blood clots [and] discharges within and from the womb."[13] Others

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[11]George Winterburn [?], "Editor's Table," Homeop. J. Obstet. 14 (1892): 533.

[12]The unprecedented number of articles on antisepsis may have been inspired by a questionnaire sent out in 1892 by George B. Peck, chairman of the Bureau of Obstetrics of the American Institute of Homeopathy. Peck's questionnaire was an annual endeavor to determine the opinion of homeopaths on various medical practices and, in 1892, he queried his colleagues on antiseptic midwifery.

The number of articles which do or do not appear in a particular journal is, of course, no indication of actual practice. I am suggesting that an increase in the amount of space within a journal devoted to one specific topic indicates a lively interest in and opinions on that subject. Most articles, in fact, described some experience with antiseptic chemicals.

[13]J. H. Marsden, "Some of the Puerperal Diseases," Homeop. J. Obstet. 3 (1882): 409.

believed a doctor's hands and dirty inanimate objects such as forceps, sponges and vaginal syringes inoculated septic matter into a woman's uterus which triggered the decomposition of her blood. Taking that notion a step further, a few homeopaths thought germs either carried by them or floating freely in the atmosphere caused puerperal septicemia. What a doctor thought caused the disease dictated his choice of preventive.

The auto-infectionists cited Pasteur's discovery of round organisms in the blood and lochia of women with puerperal fever as evidence of its endogenous origin. Prompt irrigation of the reproductive tract with chemical solutions removed the potentially dangerous disease-causing debris, and "local application" of carbolic acid, for instance, was the favored preventive technique of the doctors who believed women poisoned themselves. By the mid-1890s, medical supply houses offered "an array of instruments" designed specifically for the injection of chemicals into the uterine cavity; and, according to one homeopath, "a decided demand" existed for such hardware."[14] Co-existing with the irrigators, were the heteroinfectionists who were defined by their belief in an exogenous source of

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[14]G. R. Southwick, "The Local Treatment of Puerperal Septicemia," Homeop. J. Obstet. 17 (1895): 419-420; John J. Shaw, "Puerperal Infection," Homeop. J. Obstet. 19 (1897): 115-118.

contamination rather than an internally, spontaneously generated poison. This faction, however, did not agree on the nature of the introduced pathogen as "absorptionists" competed for ascendancy with the "infectionists." The infectionists claimed Pasteur as their hero. Puerperal fever, they argued, resulted "absolutely and necessarily [from] the presence of microorganisms entering the circulation through the open surfaces of the parturient canal." Their motto, simply stated, was "no microbe, no puerperal infection." Infectionists believed the organism was introduced by their hands, if not disinfected, and by any other unclean object brought into contact with the open wound of childbirth. The absorptionists championed Ignaz Semmelweis and his theory that puerperal septicemia resulted in women inoculated with septic matter on unclean hands, instruments and clothing. They agreed with the infectionists the pathogen came from outside a woman's body and had to be introduced, inoculated, into the system; but they denied microbes all but the most tangential role in the resulting poisoning. Septicemia was the result of "absorption by open surfaces of a decomposing, putrescent or cadaveric matter."[15] Regardless of their disagreements on

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[15]Albert H. Smith, "The President's Annual Address: The Present Aspect of the Puerperal Diseases," Trans. Am. Gynec. Soc. 9 (1885): 48-49; Marsden, "Puerperal Diseases," 410; Martin, "Puerperal Fever," 49; Betts, "Antisepsis," 126.

the responsible pathogen, the infectionists and the absorptionists valued an aseptic approach to their management of childbirth. Together with the auto-infectionists, a groundswell of homeopaths seemed willing to integrate a liberal use of chemical antiseptics into the practice of obstetrics.

The apparent increasing reliance on chemicals provoked a reaction from "traditionalists" who materialized to condemn totally the growing dependence on chemicals by homeopaths. Traditionalists feared the corrupting influence of chemicals on the entire foundation of the unique homeopathic medical philosophy, the leitmotif of which was a belief in vitalism and the healing power of nature. For them, unrestricted use of chemicals minimized an important historic therapeutic distinction between themselves and the regular medical community. The editor of the Homeopathic Journal of Obstetrics, for example, claimed "homeopathy can do all that is claimed for antisepsis, and more."[16] Fortunately, the traditionalist could rely on science to buttress his long-held conviction that the human body contained within itself natural healing powers.

The foremost spokesman for the innate healing powers of nature was the Russian-born scientist, Elie Metchnikoff (1845-1916). Metchnikoff published his pathbreaking theory

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[16]Winterburn, "Editor's Table," 543.

of immunity in 1884 based on his study of the minute water flea, Daphnia. The lowly flea was susceptible to a yeast infection caused by a spore-producing fungus; and, watching through his microscope, Metchnikoff observed the spores penetrate the flea's body cavity from its intestinal wall. According to the scientist's vivid description, as soon as the spores entered the body cavity, "blood cells attach[ed] themselves" to the invaders and eventually destroyed them. He called the destroyer cells "phagocytes," and their destruction of foreign elements "phagocytosis." Metchnikoff concluded from his observations that "the function of the blood cells [was] to protect the body against infectious agents." Further, he considered the phagocyte representative of "the healing power of nature."[17]

Modern science served the traditionalist's condemnation of chemicals, and it also afforded the infectionists and the absorptionists with a mandate to use chemicals to prevent puerperal disease. Together, these opposing factions joined together in their denunciation of vaginal irrigations as either useless at best and absolutely harmful at worst. George Winterburn, defender of traditional homeopathy, dismissed vaginal irrigations with the pithy comment that "the vagina is not to be cleaned by the same methods as

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[17]Hubert A. Lechevalier and Morris Solotorovsky, Three Centuries of Microbiology (New York: Dover Books, 1974), pp. 182-198.

a dishpan."[18] Internal injections of a chemical according to another like-minded doctor, "cause[d] irritability of the living tissues and weaken[s] their power of resistence."[19] Condemnation of vaginal douching implicitly challenged an etiology of auto-infection. Those homeopaths making that challenge placed the burden of preventing--and causing--puerperal fever on themselves. Antiseptics promised to make that burden less troublesome if they were used in the correct manner.

Advocates of antiseptic midwifery assumed optimistically "practically every case of puerperal fever [was] preventable."[20] The disease, however, persisted. Seduced by the siren's song of a risk-free childbirth with antiseptic chemicals, homeopaths struck out at their colleagues when it became evident that puerperal fever showed little inclination to disappear in a mist of carbolic acid. Obviously, there remained doctors who did not respect

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[18]Winterburn, "Editor's Table," 537. A female homeopath implied douching nozzels were used by women to masturbate. She noted one woman "believed her sister would be lonesome without her injection pipe." Alice Boole Campbell, "Opposed to Vaginal Injections," Homeop. J. Obstet. 2 (1880): 190. Sheldon Leavitt, "Obstetrics," Homeop. J. Obstet. 19 (1897): 315.

[19]Charles Aaron Pauly, "Cleanliness in Obstetrics," Homeop. J. Obstet. 14 (1892): 417; J. B. Gregg Custis, "Puerperal Fever," Homeop. J. Obstet. 15 (1893): 372-382.

[20]E. N. Leake, "Puerperal Fever," Homeop. J. Obstet. 26 (1904): 51.

the value of antisepsis and asepsis. "Among country practitioners and also in the work of city physicians," one complained, "puerperal infection is almost as common as in pre-antiseptic days."[21] Those recalcitrant colleagues "should be deemed criminally careless;" and, it was further suggested, they must be "made to feel the weight of authority."[22]

Few practitioners could ignore the charge that "a death from puerperal septicemia is an event that ought not to occur any more in the practice of a competent obstetrician."[23] Any suggestion of mismanagement struck at a doctor's reputation and, therefore, his economic livelihood. Compelled to exonerate themselves from the charge of incompetency when puerperal fever did appear among their patients, homeopaths around the country offered detailed descriptions of their experienced difficulty in the practical application of antiseptic midwifery. In doing so, they revealed the myriad problems which attended a doctor's attempt to introduce an innovation into traditional management of childbirth.

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[21]Ibid., 51.

[22]N. A., "Report of Surgical Department of the American Institute," Homeop. J. Obstet. 10 (1888): 391; J. W. Means, "The Armamentarium of the Obstetrician," Homeop. J. Obstet. 20 (1898): 239; Henry Edwin Spaulding, "Auto-infection," Homeop. J. Obstet. 20 (1898): 311.

[23]R. N. Foster, "The Causes of Puerperal Fever," Homeop. J. Obstet. 21 (1899): 54.

Sarah Millsop practiced medicine in rural Kentucky. She welcomed antiseptics, convinced an antiseptic midwifery promised life-saving potential for her patients in childbed. By 1892, she admitted, though, "now I simply do whatever circumstances allow." Millsop initially adopted the antiseptic technique of daily vaginal douching following childbirth, but her black patients opposed vigorously the practice. As both nurses and patients, black women brought to the childbirth experience an "absolute fear of water." In Millsop's words, "the colored race, as a rule, unlike ducks, do not take kindly to water." Her remark should not be dismissed as a callous expression of Southern racism. The aversion of black women to the use of water in any form after childbirth may have arisen after generations of them witnessed the death of their kin following an inconsequential chill, a typical, foreboding sign of childbed fever. For whatever reason, the protestations of black women against douching served them well. They were saved from contamination by a possibly contaminated syringe and, perhaps, avoided accidental internal perforations, a fatal embolism and hemorrhage. According to Millsop, the recovery of black women from childbirth was "prompt, and a case of puerperal septicemia [was] almost unheard of among that. . . race." The homeopath had not lost faith in antisepsis; rather, the weight of her authority to dictate what she considered informed post-partum treatment collapsed under

the more powerful influence of her patients' wishes. Millsop, the first female teacher in a Kentucky medical school may have continued to instruct her students on the virtues of antiseptic obstetrics during her classes on hygiene and sanitary science at the homeopathic Southwestern Medical College even while in actual practice patients limited her to "ordinary cleanliness."[24]

A Nebraska doctor outlined the difficulties of conducting an obstetric practice in rural areas. As a pointed reminder to those who criticized the omission of antiseptic precautions that failure to observe recognized precautions was not due simply to a doctor's laxity or carelessness. His patients called him only in an emergency or after the second stage of labor had begun. In either event, he had no defense to offer against damage already done.[25] Rural women might have thought the doctors' fees

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[24]Sarah Jane Millsop, "The Colored Nurse vs. Asepsis," Homeop. J. Obstet. 14 (1892): 465-467. On Millsop see John H. Ellis, Medicine in Kentucky (Lexington: University of Kentucky Press, 1977).

A. Davidson practiced obstetrics among Mexican families in southern California and stated they were "mortally afraid of cold water in any sickness and for forty days they will not bathe." "Obstetric Experiences," Homeop. J. Obstet. 24 (1902): 533.

Anthropologists continue to find evidence of the so-called "hot-cold" syndrome in ethnic birth practices. Carol McLain, "Ethno-obstetrics in Ajijic," in Health and the Human Condition, eds. Michael H. Logan and Edward E. Hunt, Jr. (North Scituate, Mass.: 1978), pp. 202-216.

[25]A. B. Anderson, "Puerperal Sepsis," West. Med. Review 2 (1897): 341-342.

prohibitive; but, more likely, they hesitated calling for help in the early stages of labor only to have him "stand around" in anticipation. A farmhouse also did not enjoy the privatization of space and separation of function so popular among a more cosmopolitan, urban elite. A straw pallet might bed an entire family, and families often conducted their everyday business of eating, sleeping, conceiving, birthing and dying in a single room. Demands for absolute surgical cleanliness under those conditions approached fantasy for doctors practicing the outreaches of agricultural settlements. Their cramped housing along with the cultural prohibition which prevented women from calling a doctor until the labor had gone "sour," permitted them to dictate his ability to use effectively antiseptics.

Homeopaths practicing in urban areas experienced similar constraints when they attempted to create an aseptic birth environment in a home. Like the country practitioner, doctors who delivered women living in an inner city tenement found "it impossible to comply with the requirements of modern asepsis and antisepsis." A filth-strewn, damp, dark hovel challenged any doctor to follow arbitrarily designated preventive measures. G. M. Worthington received a call to help a woman experiencing a difficult labor; and, upon arrival at her ghetto apartment, found "the only basin. . . of common tin [served as] bowl and bathtub to the whole family." The suffering woman lie in a "bed of feathers,

septic from the beginning [and] not. . . purified by the defecations of five preceding infants." She was dressed in "clothing. . . worn some days," and, as this homeopath informed those unfamiliar with such debilitating poverty, "to insist upon a change of clothing before the child was born was to make a change impossible after its delivery." Worthington knew "the purest water, the cleanest basin and all the antiseptics on earth [wound not] ensure satisfactory examination of [the] patient without danger of infection."[26] Economic exigencies determined a birth setting; and the impoverished women who lived in dismal, unhealthy conditions imposed real limitations on the most well-informed, well-intentioned doctor. When memories are jarred into recalling the late nineteenth and early twentieth century standards of personal hygiene, it should come as no surprise that the best of homes failed to provide a safe birth environment. It would not be until the first decade of this century that leading public health spokesman like Charles V. Chapin of Rhode Island articulated personal cleanliness as a primary defense against disease.[27] His campaign represented a goal not easily met. As late as

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[26]G. M. Worthington, "Sepsis from a Retained Afterbirth," Homeop. J. Obstet. 19 (1887): 465.

[27]James H. Cassedy, Charles V. Chapin and the Public Health Movement (Cambridge: Yale University Press, 1962), especially chapter 8.

1890, for instance, filtered water reached less than two percent of the urban population of the United States.[28] Personal cleanliness was desirable, but it remained difficult for most persons to maintain. Infection following birth at home, even "among the better classes of society," testified to that reality. Of 2,182 women covered by life insurance, 197 died either in or soon after childbirth. Puerperal fever accounted for a full three-quarters of those deaths. This mortality rate for women of "the class who place insurance on their lives" painted a bleak picture of home birth.[29]

Women who delivered at home--any home--risked infection and death. Women who delivered in hospitals, in contrast, seemed much less susceptible to disease and disability. In hospitals where homeopaths had inaugurated antiseptic and aseptic procedures, statistics indicated a dramatic decline in maternal mortality. At the Brooklyn (New York) Homeopathic Hospital, such a regiment produced enviable results. Out of 237 confinements, only two women died in childbed.[30] Knowledge of similar, impressive

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[28]Gert H. Brieger, ed. Medical America in the Nineteenth Century (Baltimore: Johns Hopkins Press, 1972), p.254.

[29]Loomis LeGrand Danforth, "Obstetric Antisepsis," Homeop. J. Obstet. 14 (1892): 450.

[30]Walter Sands Mills, "Antiseptic Midwifery," Homeop. J. Obstet. 14 (1892): 458.

outcomes of hospital confinement encouraged one homeopath to suggest the adoption of antiseptic midwifery "seems to be warranted, if not absolutely demanded."[31] Once considered "the hot beds of puerperal fever," homeopaths claimed the institutions were much "safer than the homes of the majority, even the rich."[32] For the first time in their history, hospitals, it seemed, provided safe passage for all women who gave birth there.

Since home birth remained the norm, infection "continued to claim a large number of innocent victims."[33] In the late 1890s, the persistence of the disease made homeopaths insistent upon an aseptic birth environment. Using antiseptic chemicals to achieve the desired sterile setting, however, remained a controversial issue. Citing their inability to ensure "absolute surgical cleanliness in. . . [every] given case," some homeopaths believed it "our duty. . . to use antiseptics."[34] Women living under miserable, unsanitary conditions defied the most

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[31]McClatchey, "Medicated Injections," 263.

[32]J. Nicholas Mitchell, "Is Aseptic or Antiseptic Treatment Called for in Obstetrical Practice When Under the Care of Homeopathic Physicians?" Homeop. J. Obstet.

[33]F. W. Hamlin, "The Relative Value of Abdominal and Vaginal Examinations in Obstetrics," Homeop. J. Obstet. 19 (1897): 213.

[34]C. B. Kinyon, "Aseptic Obstetrics," Homeop. J. Obstet. 21 (1899): 309.

conscientious effort to prepare a safe room, so antiseptics provided a measure of control unattainable without them. To the more traditional homeopath, antiseptics were "toxic [and] wholly noxious to health." George Winterburn condemned them as "bungling allopathic expedients, and incompatible with scientific therapeutics."[35] In true homeopathic fashion, Charles Pauly warned his colleagues that chemicals destroyed the natural "power of resistance [which] healthy tissues have in themselves."[36] For Pauly and Winterburn, the aseptic birth environment was best achieved by the use of soap and water. To those comments, the pro-chemical faction responded with the observation, "If cleanliness alone had been sufficient to relieve women from the danger of contamination at the hands of those whose duty it was to examine them, Semmelweis would not have been obliged to resort to chlorine water as a disinfectant."[37]

Semmelweis and his followers used chlorine to rid their hands of septic matter; and, in doing so, tried to prevent the inoculation of an inanimate pathogen into the bodies of women they examined. The credibility of that etiological theory was being sorely strained by the increasing acceptance of the germ theory of human disease.

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[35]"Editor's Table," 166.

[36]Pauly, "Cleanliness," 471.

[37]Danforth, "Obstetric Antisepsis," 444.

Until the biological explanation of disease evolved more fully, however, it could not overthrow entirely the older notion. Loomis LeGrand Danforth, former editor of the Homeopathic Journal of Obstetrics, attempted to bridge the gap between the two competing etiologies--and between fellow homeopaths. His meleriorist synthesis permitted doctors in conflict with one another to maintain a semblence of homogeneity. In 1892, Danforth considered the "prime etiological factor in the production of puerperal fever the introduction into the system of decomposing organic matter, and the obstetrician carried these poisons." Prevention of the disease, then, required, an aseptic doctor. Who among you, Danforth asked, "would be willing to place the welfare of his wife or sister during her confinement in the hands of a physician fresh from a case of malignant diphtheria, a suppurative wound or puerperal infection, knowing that such a one ignores antisepsis?" Only "disinfection" with an antiseptic could "inhibit or destroy the influence of microorganisms carried by the doctor."[38]

The very difference in etiological explanations then recommended the immediate adoption of the antiseptic

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[38]Ibid., 444. For more recent discussions on the value of disinfected hands see Andrew J. Canzonetti and Marion M. Dalley, "Bacteriologic Survey of Scrub Technics," Annal. Surg. 135 (1952): 228-233; Victor J. Tucci, et al, "Studies of the Surgical Scrub," Surg. Gynec. & Obstet. 152 (1981): 415-416.

principle into obstetrical practice. Antiseptics, though, slowly found their way into the homeopathic management of childbirth because the chemicals did not satisfy either the needs of a pluralistic community of homeopaths or receive the approval of their diverse types of patients. The less than universal integration of antiseptics reflects something much more complex than the callous indifference of physicians (whether regular or homeopath) toward the safety of women in childbed. Available scientific explanations for the cause of disease invited idiosyncratic interpretation by clinicians; and, because their experiences and their patients were different, they placed different value on antiseptics as a panacea against puerperal fever. To illuminate those conflicts is revealing. First, professional conflict over a proposed preventive suggests the existence of constraints internal to the profession which act as a "fail-safe" mechanism to impede instant integration of a proposed, yet not widely test, innovation to traditional practice. Second, examination of those conflicting opinions questions any interpretation of doctors' behavior which attempts to establish the existence of a hegemonic profession with the power to dictate or impose a practice on an unsuspecting population. Patients had attitudes about the value of antiseptics, too. Middle-class urban women informed about the emerging germ theory appreciated the safety of a hospital birth when cleanliness

was strictly enforced. Those women were the first to enter a hospital to give birth. The majority of women, however, remained at home. The inability of doctors to either persuade those patients of the need for cleanliness or even implement asepsis in the home because of living conditions meant home birth remained potentially treacherous while hospital birth, in contrast, provided more assurance for those involved that disease was less likely.[39]

The campaign against puerperal fever led by concerned doctors eventually culminated in the removal of birth from the home and into a hospital. As doctors moved from promoting simple cleanliness to a strict aseptic regimen, they raised the expectations of a childbirth free of risk, one no longer approached with fear of death or debility. All innovations are Janus-faced. Beyond the acknowledged risks of any proposed innovation lay also the optimism of banishing a particular affliction. When antiseptics alone failed to eradicate puerperal fever among women delivered in their homes, they and their doctors thought the sought after safe childbirth could be achieved only through the introduction of yet another innovation--hospital birth. That hospitals have not become for many

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[39]Neal Devitt describes the trend in the twentieth century. "The Transition from Home to Hospital Birth in the United States, 1930-1960," Birth & Family J. 4 (1977): 47-69.

women today the supposed sanctuary that past participants envisioned them should not dull sensitivity to the complex process which brought about the hospitalization of childbirth. The movement led by educated, for the most part, middle class, white women for a return to "natural" childbirth in the home or in a home-like setting within a hospital is yet another imagined panacea against the hazards of childbirth. Since the history of childbirth in America reveals innovations often result in unanticipated consequences, policy makers should be alert to the inherent pitfalls contained with any perfectionist scheme which imposes non-negotiable standards on what constitutes an acceptable birth procedure. Each and every woman must have the freedom to choose how her child will be born. Just as this decision should not be imposed upon her by a physician, neither should it be dictated to her by childbearing peers.

SELECT BIBLIOGRAPHY

SECONDARY WORKS - BOOKS

Ackerknecht, Erwin H. A Short History of Medicine. New York: The Ronald Press, 1955.

Arms, Suzanne. Immaculate Deception: A New Look at Women and Childbirth in America. New York: Houghton Mifflin, 1975; Bantam Books, 1977.

Blake, John B. Public Health in the Town of Boston, 1630-1822. Cambridge: Harvard University Press, 1959.

Bosk, Charles L. Forgive and Remember: Managing Medical Failure. Chicago: University of Chicago Press, 1979.

Bremner, Robert H. From the Depths: The Discovery of Poverty in the United States. New York: New York University Press, 1956; Paperback ed., 1967.

Breiger, Gert H., ed. Medical America in the Nineteenth Century: Readings from the Literature. Baltimore: Johns Hopkins Press, 1972.

Cianfrani, Theodore. A Short History of Obstetrics and Gynecology. Springfield, Ill.: Charles C. Thomas, 1960.

Degler, Carl N. At Odds: Women and the Family in America from the Revolution to the Present. Oxford: Oxford University Press, 1980; Oxford University Press Paperback, 1981.

Ditzion, Sidney. Marriage, Morals, and Sex in America: A History of Ideas. New York: W. W. Norton & Co., Inc., 1953; expanded paperback ed., 1969. First publ. 1953.

Duffy, John. Sword of Pestilence: The New Orleans Yellow Fever Epidemic of 1853. Baton Rouge: LSU Press, 1966.

Eaton, Leonard K. New England Hospitals, 1790-1833. Ann Arbor: The University of Michigan Press, 1957.

Faber, Knud. Nosography in Modern Internal Medicine. New York: Paul B. Hoeber, Inc., 1922.

Flexner, James Thomas. Doctors on Horseback: Pioneers of American Medicine. New York: The Viking Press, 1937; reprint ed., New York: Dover Publicastions, 1968.

Garrison, Fielding H. An Introduction to the History of Medicine. 3rd rev. ed. Philadelphia: W. B. Saunders Co., 1924.

Godlee, Sir Rickman J. Lord Lister. 3rd rev. ed. Oxford: Clarendon Press, 1924.

Greven, Philip J., Jr. Four Generations: Population, Land and Family in Colonial Andover, Massachusetts. Ithaca, New York: Cornell University Press, 1970; Cornell Paperbacks, 1972.

Guthrie, Douglas. A History of Medicine. Philadelphia: J. B. Lippincott Co., 1946.

Hare, Ronald. The Birth of Penicillin. London: George Allen & Unwin Ltd., 1970.

Hawkins, Cora Frear. Buggies, Blizzards and Babies. Ames: Iowa State University Press, 1971.

Henretta, James A. The Evolution of American Society, 1700-1815. Lexington, Mass.: D. C. Heath and Co., 1973.

Lechevalier, Hubert A. and Solotorovsky, Morris. Three Centuries of Microbiology. New York: Dover Books, 1974.

Litoff, Judith Barrett. American Midwives, 1860 to the Present. Westport, Conn.: Greenwood Press, 1978.

Mottus, Jane E. New York Nightingales: The Emergence of the Nursing Profession at Bellevue and New York Hospital, 1850-1920. Ann Arbor, Mich.: UMI Research Press, 1981.

Pickard, Madge E. and Buley, R. Carlyle. The Midwest Pioneer, His Ills, Cures and Doctors. New York: Henry Schuman, 1946.

Powell, J. H. Bring Out Your Dead: The Great Plague of Yellow Fever in Philadelphia in 1793. Philadelphia: University of Pennsylvania Press, 1949. Time, Inc. New York: Time Reading Program Special Edition Paperback, 1965.

Ricci, James V., M.D. The Development of Gynaecological Surgery and Instruments. Phila: The Blakiston Co., 1949.

Ricci, James V. One Hundred Years of Gynecology. Phila: Blakiston Co., 1945.

Rich, Adrienne. Of Woman Born: Motherhood as Experience and Institution. New York: W. W. Norton, 1976; Bantam Books, 1977.

Rosenberg, Charles E. The Cholera Years. Chicago: University of Chicago Press, 1962; Phoenix Books, 1974.

Rosenberg, Charles E. No Other Gods: On Science and American Social Thought. Baltimore: Johns Hopkins University Press, 1976.

Rothman, David J. The Discovery of the Asylum: Social Order and Disorder in the New Republic. Boston: Little, Brown and Co., 1971.

Rothstein, William G. American Physicians in the Nineteenth Century: From Sects to Science. Baltimore: The Johns Hopkins University Press, 1972.

Ruzek, Sheryl Burt. The Women's Health Movement: Feminist Alternatives to Medical Control. New York: Praeger Publishers, 1979.

Scully, Diana. Men Who Control Women's Health: The Miseducation of Obstetrician-Gynecologists. Boston: Houghton Mifflin Company, 1980.

Shryock, Richard. Medicine in America: Historical Essays. Baltimore: Johns Hopkins Press, 1966.

Richard H. Shryock. Medicine and Society in America, 1660-1860. New York: New York University Press, 1960.

Stage, Sarah. Female Complaints: Lydia Pinkham and the Business of Women's Medicine. New York: W. W. Norton and Co., 1979.

Thoms, Herbert, M.D. Chapters in American Obstetrics. 2nd ed. Springfield, Ill: Charles C. Thomas, 1933.

Walsh, Mary Roth. Doctors Wanted: No Women Need Apply. New Haven: Yale University Press, 1977.

Wangensteen, Owen H. and Wangensteen, Sarah D. The Rise of Surgery: From Empiric Craft to Scientific Discipline. Minneapolis: University of Minnesota, 1978.

Wertz, Richard W. and Wertz, Dorothy C. Lying-in: A History of Childbirth in America. New York: The Free Press, 1977.

Williams, William H. America's First Hospital: The Pennsylvania Hospital, 1751-1841. Wayne, Pa.: Haverford House, 1976.

Winslow, Charles-Edward Amory. The Conquest of Epidemic Disease: A Chapter in the History of Ideas. Princeton: Princeton University Press, 1943; reprint ed. Madison: University of Wisconsin Press, 1980.

Youngson, A. J. The Scientific Revolution in Victorian Medicine. New York: Holmes and Meier Publishers, Inc., 1979.

ORIGINAL WORKS - BOOKS

Barker, Fordyce. The Puerperal Diseases. New York: D. Appleton & Co., 1874.

Churchill, Fleetwood, ed. Essays on the Puerperal Fever and Other Diseases Peculiar to Women. London: The Sydenham Society, 1849.

Churchill, Fleetwood. On the Diseases on Women, Including Diseases of Pregnancy and Childbed. New Am. ed. Philadelphia: Blanchard & Lea, 1852.

Colebrook, Dora C. The Source of Infection in Puerperal Fever due to Haemolytic Streptococci. London: His Majesty's Stationery Office, 1935.

Collins, Robert. A Practical Treatise on Midwifery. New York: Bailliere Brothers, 1859.

Dewees, William P. A Treatise on the Diseases of Females. Philadelphia: H. C. Carey & I. Lea, 1826.

Hippocrates. Hippocrates. Vol. 2. Translated by W.H.S. Jones. Cambridge: Harvard University Press, 1923.

Hodge, Hugh L. On the Non-Contagiousness of Puerperal Fever. Philadelphia: Collins, 1852.

Hudson, Alfred. Lectures on the Study of Fever. Philadelphia: Henry C. Lea, 1869.

Lawrence, Charles. History of the Philadelphia Almshouses and Hospitals. Compiled and published by Charles Lawrence. Phila. 1905. Reprint, New York: Arno Press, 1976.

Meigs, Charles V. The History, Pathology, and Treatment of Puerperal Fever and Crural Phlebitis. Philadelphia: Ed. Barrington & Geo. D. Hajwell, 1842.

Meigs, Charles D. On the Nature, Signs, and Treatment of Childbed Fevers. Philadelphia: Blanchard & Lea, 1854.

Semmelweis, Ignaz. The Etiology, Concept, and Prophylaxis of Childbed Fever. Translated and edited by K. Codell Carter. Madison: University of Wisconsin Press, reprint ed., 1983.

Simpson, James Y. Anesthesia, Hospitalism, Hermaphroditism and a Proposal to Stamp Out Small-Pox and Other Contagious Diseases. Edited by W. G. Simpson. Edinburgh: Adam & Charles Black, 1871.

Simpson, James Y. Selected Obstetrical and Gynaecological Works. Edited by J. Watt Black. New York: D. Appleton & Co., 1871.

Simpson, James Y. Clinical Lectures on the Diseases of Women. Edited by Alexander R. Simpson. New York: D. Appleton & Co., 1877.

Virchow, Rudolf. Cellular Pathology. Translated by Frank Chance. 2nd German ed. New York: Dover Publications, Inc., 1971. Orig. publ., 1863.

SECONDARY WORKS - ARTICLES

Ackerknecht, Erwin H. "A Plea for a 'Behaviorist' Approach in Writing the History of Medicine." J. Hist. Med. & Allied Sci. 22 (1967): 211-214.

Allen, Phyllis. "Etiological Theory in America Prior to the Civil War." J. Hist. Med. & Allied Sci. 2, 489-520.

Brieger, Gert H. "Hospital Infections: A Brief Historical Appraisal." In Occurrence, Diagnosis, and Sources of Hospital-Associated Infections. pp. 1-12. Edited by William J. Fahlberg and Dieter Groschel. New York: Marcel Dekker, Inc., 1978.

Brieger, Gert H. "Sanitary Reform in New York City: Stephen Smith and the Passage of the Metropolitan Health Bill." Bull. Hist. Med. 60 (1966): 407-429.

Brieger, Gert H. "American Surgery and the Germ Theory of Disease." Bull. Hist. Med. 40 (1966): 135-145.

Churchill, Edward. "The Pandemic of Wound Infection in Hospitals: Studies in the History of Wound Healing." J. Hist. Med. & Allied Sci. 20 (1965): 390-404.

Earle, A. Scott. "The Germ Theory in America: Antisepsis and Asepsis (1867-1900)." Surgery 65 (1969): 508-522.

Fitzgerald, James A. "Rosebush Scratch." N. Y. State J. Med. 72 (1972): 1077-1080.

Haire, Doris. "The Cultural Warping of Childbirth." In The Cultural Crisis of Modern Medicine. pp. 185-200. Edited by John Ehrenreich. New York: Monthly Review Press, 1978.

Lomas, Peter. "An Interpretation of Modern Obstetric Practice." In The Place of Birth. pp. 174-184. Edited by Sheila Kitzinger and John A. Davis. Oxford: Oxford University Press, 1978.

Longo, Lawrence. "Obstetrics and Gynecology." In The Education of American Physicians: Historical Essays. pp. 205-225. Edited by Ronald L. Numbers. Berkeley: University of California Press, 1980.

Meigs, J. Wister. "Puerperal Fever and Nineteenth Century Contagionism: The Obstetrician's Dilemma." Trans. Coll. Phys. Phila. 42 (1975): 273-280.

Murphy, Frank J. "Ignaz Philipp Semmelweis (1818-65): An Annotated Bibliography." Bull. Hist. Med. 20 (1946): 653-707.

Parsons, Gail Pat. "Equal Treatment for All: American Medical Remedies for Male Sexual Problems, 1850-1900." J. Hist. Med. & Allied Sci. 33 (1977): 55-71.

Parsons, Gail Pat. "The British Medical Profession and Contagion Theory: Puerperal Fever as a Case Study." Med. Hist. 22 (1978): 138-150.

Peckham, C. H. "A Brief History of Puerperal Fever." Bull. Hist. Med. 3 (1935): 187-212.

Penman, W. Robert. "The Public Practice of Midwifery in Philadelphia." Trans. Coll. Phys. Phila. 37 (1969): 124-132.

Rich, Adrienne. "The Theft of Childbirth." In Seizing Our Bodies: The Politics of Women's Health. pp. 146-163. Edited by Claudia Dreifus. New York: Vintage Books, 1977.

Scholton, Caterine M. "On the Importance of the Obstetrik Art: Changing Customs of Childbirth in America, 1760-1825." Wm. & Mary Quart. 34 (1977): 426-445.

Temkin, Owsei. "An Historical Analysis of the Concept of Infection." pp. 123-147. In Studies in Intellectual History. Baltimore: Johns Hopkins Press, 1953.

Wangensteen, Owen H. "Nineteenth Century Wound Management of the Parturient Uterus and Compound Fracture: The Semmelweis-Lister Priority Controversy." Bull. N. Y. Acad. Med. 46 (1970): 565-596.

Williams, William H. "Independence and Early American Hospitals, 1751-1811." J. A. M. A. 236 (1976): 35-39.

ORIGINAL WORKS - ARTICLES

Bell, H. S. "The Use of Antiseptics in Obstetric Practice." Peoria Med. Month. 5 (1884-5): 72-80.

Bennett, Ezra. "On the Identity of Erysipelas and a Certain Form of Puerperal Fever, and Its Contagiousness." Am. J. Med. Sci. 19 (1850): 376-383.

Bowen, William. "Epidemic Puerperal Fever, at Millersburgh, Ohio." West. Lancet 2 (1843): 63-66.

Chamberlain, William. "The Germ Theory of Disease." Ohio Med. S. J. 2 (1877): 289-315.

Channing, Walter. "On the Contagiousness of Puerperal Fever." Boston Med. & S. J. 52 (1855): 293-299.

deLezczynski, A. "Contagion." Ohio Med. & Surg. J. 6 (1852): 20-27.

Erichsen, J. E. "Impressions of American Surgery." Lancet 2 (1874): 717-720.

Flint, Austin. "Report of Cases of Epidemic Puerperal Fever Occurring at Buffalo, New York." N. Y. J. Med. 5 (1845): 25-41.

Frankl, F. W. "A Study on the Etiology of Puerperal Disease." Am. J. Obstet. 11 (1878): 348-363.

Gillette, Walter R. "Report of the Lying-In Service of the New York Charity Hospital for the Year 1875." Am. J. Obstet. 9 (1876): 452-466.

Gross, Samuel D. "The Factors of Disease and Death after Injuries, Parturition and Surgical Operations." In Medical America in the Nineteenth Century. pp. 190-197. Edited by Gert H. Brieger. Baltimore: Johns Hopkins Press, 1972.

Hall, Charles and Dexter, George. "Account of Erysipelatous Fever, as it Appeared in the Northern Section of Vermont and New Hampshire in the Years 1842-3." Am. J. Med. Sci. 7 (1844): 2-27.

Herdegen, Robert. "Ignaz Philip Semmelweiss, a Biographical Sketch." Am. J. Obstet. 18 (1885): 248-255.

Hoag, Junius C. "Puerperal Fever and Its Treatment." Am. J. Obstet. 20 (1887): 828-844.

Hodge Hugh L. "Cases and Observations Regarding Puerperal Fever, as it Prevailed in the Pennsylvania Hospital in February and March, 1833." Am. J. Med. Sci. 12 (1833): 325-352.

Kammerer, Joseph. "Historical Review of Uterine Injections." Am. J. Obstet. 1 (1869): 377-404.

Kinkhead, R. J. "Questions Relative to Puerperal Fever." Am. J. Obstet. 17 (1884): 698-717.

Kneeland, Samuel. "On the Contagiousness of Puerperal Fever." Am. J. Med. Sci. 11 (1846): 45-63.

Knowlton, Charles. "Erysipelas and Puerperal Fever." Boston M. & S. J. 30 (1844): 89-95.

Leasure, D. "The Erysipelatous Disease of Lying-In Women." Am. J. Med. Sci. 31 (1856): 45-49.

Lister, Joseph. "On a New Method of Treating Compound Fracture, Abscess, etc., with Observations on the Conditions of Suppuration." Lancet 1 (1867): 326-329; 357-359; 387-389; 507-509.

Lister, Joseph. "On the Antiseptic Principle in the Practice of Surgery." Lancet 2 (1867): 353-356.

Lister, Joseph. "On the Antiseptic Treatment in Surgery." British Med. J. 2 (1868): 53-56; 101-102;461-463; 515-517.

Lister, Joseph. "On the Effects of the Antiseptic System Upon the General Salubrity of a Surgical Hospital." Lancet 1 (1870): 194-200.

Lister, Joseph. "Further Evidence Regarding the Effects of the Antiseptic Treatment Upon the Salubrity of a Surgical Hospital." Lancet 2 (1870): 287-289.

Lomer, Carl. "Our Present Knowledge of the Relations Between Micro-Organisms and Puerperal Fever." Am. J. Med. Sci. 17 (1884): 673-697.

Lusk, William T. "On the Nature, Origin and Prevention of Puerperal Fever." In Transactions of the International Medical Congress of Philadelphia, 1876. pp. 829-847. Edited by John Ashworth, Jr. Philadelphia: Printed for the Congress, 1877.

Mitchell, Thomas D. "Practical Remarks on Contagion and Infection." West. Lancet 5 (1846): 1-8.

Morgan, Porter D. "Antiseptics in Obstetric Practice by the General Practitioner." Trans. Med. Soc. West. Virginia (1886): 313-318.

Nobel, Charles P. "Antiseptic Midwifery as Practiced in the Philadelphia Lying-In Charity." Med. & Surg. Report. 58 (1888): 397-398

Nott, J. C. "Intra-Uterine Medication." Am. J. Obstet. 3 (1870): 36-63.

Peaslee, E. R. "Injections into the Peritoneal Cavity After Ovariotomy." Am. J. Obstet. 3 (1870): 300-318.

Peebles, J. F. "Facts in Relation to Epidemic Erysipelas as it Prevailed in Petersburg, Virginia, during the Winter and Spring, 1844-45." Am. J. Med. Sci. 11 (1846): 23-44.

Pitcher, Z. "On the Induction of Puerperal Fever, by Inoculation (so-called)." Peninsular J. Med. & Collat. Sci. 2 (1855): 337-354.

Putzel, Leonard. "Puerperal Fever." Am. J. Obstet. 8 (1875): 293-308.

Roberts, T. E. "Aseptic Precautions Observed in the Obstetrical Ward of Cook County Hospita." Med. Era 7 (1889): 103-104.

Severn, Charles. "Remarks on Puerperal Fever." Boston Med. & S. J. 5 (1831): 155-157.

Sickles, George. "Epidemic Puerperal Fever--Black Tongue--Erysipelas, etc." St. Louis Med. & Surg. J. 7 (1850): 1-7.

Thomas, T. Gaillard. "The Prevention and Treatment of Puerperal Fever." Am. J. Obstet. 17 (1884): 278-284.

Whitney, William F. "Bacteria and their Relations to Disease." Boston Med. & S. J. 113 (1880): 125-127; 145-148.

Wylie, W. Gill. "The Use of Antiseptics after Abortion and Labor." Am. J. Obstet. 16 (1883): 863-866.

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