

Colorado Gynecological and Obstetrical Society  
E. Stewart Taylor Lectureship  
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### **It's All in What You Call It.**

The essence of my remarks this evening, is that words, combinations of words, how we say things, and how we describe things has an effect on how we think and how we behave. Language matters. All poets know this, for they are the wordsmiths of our culture.

"Words strain,  
Crack and sometimes break, under the burden,  
Under the tension, slip, slide, perish,  
Decay with imprecision, will not stay in place,  
Will not stay still."

T. S. Eliot

Physicians may not be as keenly aware of how they use the language, or perhaps even how the language uses them.

For several years in the 1960s, William B. Bean, the professor of medicine at the University of Iowa wrote an annual article in Archives of Internal Medicine called the "Tower of Babel". With characteristic wit and wisdom the articles addressed his concern about the importance of language in the practice of medicine and drew attention to one or another misuse of the language. He decried jargon, errors in meaning, use of abbreviations, etc. During my residency, I looked forward to these essays each year, as a way to avoid becoming one of those people who, as Bean described them, "float about in a linguistic fog and never forsake it for the world of clarity." (Bean, 1961).

I am certainly not the first obstetrician-gynecologist to be concerned about how the language we use modifies our professional behavior. The late Dr. Joseph Seitchik, in

his presidential address entitled "Words, Thoughts, and Things, at the annual meeting of the American Gynecological and Obstetrical Society in 1985, drew attention to the profound effect the language can have on our practice of obstetrics and gynecology.

Drs Peterson and Cefalo pointed out that the language we use as obstetricians often denote attitudes of control more appropriate in a context of combatants engaged in war or prisoners behind bars rather than practice of medicine (Peterson & Cefalo, 1990). Every prenatal record displays the patient's "EDC", expected date of confinement. *Confinement* at one time was well recognized as the lying-in of a woman in childbirth. Now this term and some of the others we that use suggest we are working in penal colony: "*expected date of confinement*", "*in the house*", "*incarcerated uterus*," "*hard labor*," and "*letting her out of the hospital*." Why do we not say instead "*expected day of delivery*", "*in the hospital*", "*trapped uterus*", "*difficult labor*" and "*dismissed from the hospital*" as just a few examples.

Terms and descriptions, though not derogatory, may simply need renovation and updating. "Cesarean section" is good example (Katz et al. 1995). We all know it had nothing to do with the birth of Julius Caesar whose mother, Aurelia, lived to give birth to his young siblings. It may be related to the Lex Regius and the Lex Caesare, the laws that required postmortem delivery of fetuses when mothers died during pregnancy. But modern abdominal delivery rarely involves mother's who have died. The term may be derived from the Latin word "*caedere*" meaning to cut, and if so the term Cesarean section is unnecessarily redundant. Why don't we just call the operation what it is, a *hysterotomy*. In the new terminology the classical cesarean would become a *classical hysterotomy*, retaining the concept that that which is old and was once the standard is indeed "classical". Low transverse cesarean would become a *contemporary hysterotomy*, and if a low vertical incision is used it would be called *neoclassical hysterotomy*. Any new methods or innovative locations of the incision are involved it would be regarded as *postmodern hysterotomy*. VBAC for vaginal birth after cesarean would become vaginal

birth after hysterotomy or *VBAH*, which seems to suggest that this all borders on humbug.

The naming of maladies.

Fibromyalgia is a chronic musculoskeletal syndrome associated with widespread pain, localized areas of deep muscle tenderness, fatigue and nonrefreshing sleep (Ruddy, 1999). Other than deep tenderness in many muscle groups, there are no characteristic physical findings and no laboratory or imaging abnormalities. Specifically, tests for acute or chronic inflammation are normal, as are tests for autoimmune disease. As there are no characteristic pathophysiologic findings, and no known etiology, there is also no specific therapy. Dr. Kenneth Pelletier of the NIH-funded Complementary and Alternative Medicine Program at Stanford University, notes that hypnotherapy, mind-body medicine techniques, acupuncture, homeopathy and spinal manipulation have all been used with limited success to treat patients with fibromyalgia. (Pelletier 2000)

Gynecologists frequently encounter patients with this malady because 90 % of the patients who suffer from the disorder are women under the age of 50. There are support groups, advocacy organizations, books, and Internet web sites, entirely devoted to this disorder. Lobbying efforts by sufferers and their supporters have resulted in millions of dollars being spent by NIH and others in search of cure, all to no effect so far.

The term *fibromyalgia* was introduced in 1990 by a rheumatologist at the University of Kansas, in a sincere effort to standardize diagnostic criteria to facilitate research about the syndrome. The term is simply a descriptive combination of Greek and Latin routes: *algia* for pain, *myo* for muscle, and *fibro* for ligaments and tendons. Patients find comfort in the diagnosis, because it implies that there is an organic pathophysiologic foundation to their symptoms and it avoids the stigmata of psychosomatic illness.

Fibromyalgia is the third most common disorder seen by rheumatologists after osteoarthritis and rheumatoid arthritis and accounts for a 46 % of Social Security disability awards. Although intense research interest developed in association with the

naming of the condition, the symptom complex has been known since ancient times. Other names have been used including fibrositis, myofascial pain syndrome and even chronic fatigue syndrome among others. Critics doubt the validity of fibromyalgia as a syndrome and believe the labeling of it as such has untoward iatrogenic consequences (Bohr, 1995). There are powerful groups who benefit from the perpetuation of the syndrome, including doctors, alternative health practitioners, lawyers involved in disability litigation and drug companies marketing treatments of unsubstantiated benefits (Groopman, 2000). Even Dr. Wolfe, who introduced the term in 1990, now acknowledges that the diagnostic criteria for fibromyalgia have not fulfilled their original purpose, and suggests that "... we should stop using the "F" word with patients, since it doesn't help them get better." (Groopman, 2000). One critic of the fibromyalgia syndrome said, "Fibromyalgia is a good illustration of the fact that a smart new name of an old malady can spread like wildfire if well matched in time socioculturally." (Leonhardt, 2000)

*Meconium aspiration syndrome* is another case in point. Meconium aspiration syndrome (MAS) is a respiratory illness of term or postterm newborn infants characterized by respiratory distress, patchy infiltrates seen on X-ray of the lungs, and progression in severe cases to intractable and fatal pulmonary hypertension. In 1955 Peterson and Pendleton had described a respiratory illness in newborns related to aspiration. The association of this syndrome with aspiration of meconium stained amniotic fluid, however, was introduced in 1970 in an abstract entitled "Intrauterine Meconium Aspiration" by G. A. Gregory and W. H. Tooley at the University California, San Francisco. They reported that among 1000 infants delivered in a 6-month period, 88 were stained with meconium. Immediately after birth they intubated the tracheas of 80 of these infants and suctioned the air, retrieving from 0.5 to 1.5 ml of meconium-stained mucus from each of the infants. Sixteen (20%) of the infants were found to have radiographic changes of streaky infiltrates or linear or gross atelectasis. Also, 16 of the

88 (20%) had respiratory symptoms varying from mild respiratory distress to severe respiratory insufficiency requiring assisted positive pressure breathing. Of interest, their report did not state whether the 16 infants who developed respiratory illness were the same 16 who had positive radiographic findings. On the basis of this experience they recommended that all infants with meconium stained amniotic fluid have routine endotracheal suction performed. Subsequently in 1971 the same authors published two papers in the journal *Radiology*. One article described the radiographic findings in the 88 patients mentioned in the abstract, and the other described radiographic findings in newborn puppies in which 0.5 ml of a 50% meconium solution was injected into the trachea. The first use of the term *meconium aspiration syndrome* appeared in 1973 in a letter to the editor in *Pediatrics* written by M. L. Cohen entitled "Wilson-Mikity or meconium aspiration syndrome?" Within two years thereafter, the term *meconium aspiration syndrome* (MAS) was widely used in the literature and essentially defined the syndrome as being caused by in utero aspiration of meconium. Most of the research and treatment efforts for the next 10 years were confined to determining means of preventing the in utero aspiration of meconium or removing meconium from the trachea immediately after birth. This involved diligent DeLee suctioning of the oropharynx by obstetricians at the time of birth and endotracheal suctioning by pediatricians immediately after birth. This treatment became standard of care and was recommended in many guidelines for care of the meconium stained infant. There were even suggestions that saline lavage of the infant's trachea would further reduce the risk of MAS by removing additional amounts meconium. The consequences of this aggressive approach were that some infants were actually traumatized by the effort to remove meconium, and some obstetricians and pediatricians were unjustly found guilty of malpractice for having not performed these meconium-removing procedures in infants who developed MAS. I will not go into all of the details of the painstaking epidemiological and clinical research that has increasingly but convincingly established that the *meconium aspiration syndrome* has

relatively little to do with aspiration of meconium. Meconium is simply a fellow traveler in a syndrome that very likely begins with damage to pulmonary vasculature and other tissues days or weeks before birth, the etiology of which may be hypoxemia, infection, or something else. The name *meconium aspiration syndrome*, focused attention in the wrong place and contributed to a 20-year detour in research and therapy. I must confess to having been a principle player in the misadventure.

Sometimes giving a syndrome a memorable name is useful. Dr. Jack Pritchard and his colleagues at the Western Reserve School of Medicine in Cleveland, were among the first to note the occurrence of hemolysis and thrombocytopenia with severe preeclampsia in a series of three patients published in *The New England Journal of Medicine* in 1954. In two of the patients there was evidence of hepatic dysfunction characterized by elevated serum bilirubin and cephalin-cholesterol flocculation. They referred to other reports in the literature that had suggested a similar association, and speculated that the syndrome might be more prevalent than was being reported in the literature. Nevertheless, little interest was shown in this syndrome even after Dr. Allen Killam, at the William Beaumont Army Hospital in El Paso, published in 1975 a series of five cases of severe preeclampsia complicated by liver dysfunction, thrombocytopenia and hemolysis. This variant of preeclampsia did not receive much attention until 1982 when Dr. Lois Weinstein at the University of Arizona described a "a unique group of preeclamptic/eclamptic patients with findings of hemolysis, elevated liver enzymes and a low platelet count. There was nothing unique about this group of patients, the disorder had been described before; but there was, indeed, something unique about what the disorder was called, *HELLP syndrome*. The acronym coined by Dr. Weinstein was H for hemolysis, EL for elevated liver enzymes, and LP for low platelets. All it needed was a clever name and the syndrome began to appear everywhere - on obstetrical services, in journal publications, textbooks, and grant applications. Indeed, the incidence of this variant of preeclampsia has increased. Is it because the clever but simple acronym kept

the syndrome in the minds of clinicians so they recognize what they previously overlooked? This seems unlikely in that the clinical presentation of these patients is not subtle. Patients as ill as those with HELLP syndrome do not go unnoticed. Or is it that this is a new mutant among the protean manifestations of preeclampsia that mysteriously evolved when it was given a name? To give you some idea of how quickly the new name of this disease entered our lexicon, I recall the day my good friend and colleague, Dr. Bob Cefalo took a call from a physician in our catchment area in rural North Carolina. The physician described a patient at 30 weeks gestation with hypertension, proteinuria, anemia, thrombocytopenia and abnormal liver function tests. Dr. Cefalo said, "I think your patient has HELLP." "No, no, you don't understand," replied the perplexed voice at the other end of the phone, "she needs help!"

Doctors are fond of attaching their names to procedures, parts of anatomy and syndromes and diseases that they were the first to describe. Fallopian tube, Graffian follicle, Krukenberg tumor, Meig syndrome, Scanzoni maneuver, Stein-Leventhal syndrome and dozens more. In 1958, Dr. Harold Speert, an obstetrician-gynecologist at Columbia University, published a book subtitled *Essays in Eponomy* that catalogued brief biographies and original relevant publications of scores of these doctors so memorialized. These names do nothing to help us understand or remember the disease, the anatomic appendage or the procedure. In fact they are nightmares for students or residents trying to acquire the legion of facts and trivia that enable them to pass examinations.

Diseases are sometimes given the names of famous people who had the disease, thereby keeping the malady in the public consciousness. A good example is amyotrophic lateral sclerosis, the spinal neuropathy known to most Americans as "Lou Gehrig's disease." But from time to time naming a malady in this way does a disservice to its namesake. For example the syndrome characterized by obesity, hypersomnolence and right ventricular failure has been called the pickwickian syndrome every since Sir William Osler proposed the name. Dicken's delightful character, Samuel Pickwick, was

neither obese or hypersomnolent and there is no evidence that he suffered from right ventricular failure. He was as lively a person as ever lived in fiction and the very anti-characterization of this syndrome. There is, however, in the *Pickwick Papers*, Joe the Fat Boy, who, when he knocked on someone's door, was usually found to be sound asleep, leaning against the door frame, when the door was opened. It is surprising that, William Osler, with his impressive education in the classics, made such an error in this association. Knowing his English literature, he should have called it "Joe the Fat Boy syndrome", though that isn't quite so pleasing to the ear as "pickwickian".

Another example is the Munchausen syndrome, wherein individuals use extraordinary means of feigning serious disease to gain attention and admission to hospitals. The syndrome was named after Baron Karl Friedrich Heironymus Münchhausen, a German aristocrat and officer who served in the Russian army in two wars against the Turks. Although he may have been guilty of exaggerating some of his military adventures, his reputation as a colossal liar, was promulgated by an exiled German professor named Rudolph Erich Raspe who in 1775 published a book entitled *Baron Munchausen's Narrative of His Marvelous Travels and Campaigns in Russia* (Luce, 1978; Lazarus 1989) This book was a complete exaggeration and prevarication by Raspe, who was eccentric, hypochondriacal and probably envious of Münchhausen's career. Münchhausen is said to have died of depression brought on by the public disgrace caused by the publication of Raspe's book. In naming the syndrome after the good Baron, he is not even given the courtesy of his name being spelled correctly (an "h" is missing); and his memory is besmirched by the association with this bizarre and pitiful disorder that should more accurately have been called Raspe syndrome.

Hundreds of words enter our language each year. They are needed to describe new phenomenon, new technologies, new discoveries or they simply emerge from the culture, having been fabricated either intentionally or haphazardly as people make the language fit their lives or their professions. *Infantile sexuality, the Oedipus*

*complex, inferiority complex, guilt complex, sublimation, id, ego, and superego* are all terms introduced by Sigmund Freud . There is some debate as to whether this generous addition to the lexicon helped or hindered modern psychiatry.

Words change their meaning and definitions that were clear-cut a generation ago may slip out of fashion - with a bang or scarcely noticed. The meaning of words can also be intentionally manipulated for a variety of economic, social, cultural, or legal, or political purposes. In 1994 the American College of Obstetricians and Gynecologists published a Committee Opinion in which they recommend that the term *fetal distress* as an antepartum or intrapartum diagnosis was "imprecise and non-specific" and should be replaced by the term *non-reassuring fetal status*. I will leave it to you to decide whether *non-reassuring fetal status* is more precise or more specific than *fetal distress*. In the same statement the Committee on Obstetric Practice recommended that the term *birth asphyxia* should be used only when there was profound metabolic or mixed acidemia (pH less than 7.00), an Apgar score of 0-3 persisting for longer than 5 minutes, and neurological sequelae to include seizures, coma, hypotonia and cardiovascular, gastrointestinal, hematologic, pulmonary or renal dysfunction. These modifications were recommended as a result of studies showing that serious encephalopathy seldom occurred in the absence of such findings. In February 1998, an ACOG Committee Opinion confirmed that the term *fetal distress* had been deleted from the International Classification of Disease. It is possible that these considerable efforts to modify the language were in response to the success that plaintiff's attorney's were having litigating cases of infant brain damage alleged to occur from lack of adequate fetal monitoring either before or during labor. This trend may have resulted from an overzealous prediction of the salutary benefits of fetal monitoring published in 1975 from the institution with the greatest experience in using the techniques (Quilligan & Paul, 1975). Did changing the language help? There is anecdotal evidence that the number of such

malpractice cases has decreased, but I know of no evidence that there has been an improvement in intrapartum care as a result in the change in the language.

Another example of intentional manipulation of the language is what has occurred with the words and terms that are used to describe and define the events of early pregnancy, especially the revisionist definitions of the words *conception*, *embryo* and *pregnancy*. The story begins in 1966 when the American College of Obstetricians and Gynecologists received funds from the Children's Bureau in the Department of HEW to study and standardize obstetric, gynecologic and infant terminology and clinical statistics. The task was undertaken by a newly appointed Committee on Terminology headed by Dr. Edward Hughes of Syracuse, who had worked on a similar task force on terminology for the New York State Department of Health. The book entitled *Obstetric Gynecologic Terminology with Sections on Neonatology and Glossary of Congenital Anomalies* was published in 1972. The definition of *conception* was listed as "the implantation of the blastocyst. It is not synonymous with fertilization. Synonym: Implantation." *Pregnancy* was defined as "the period of time from confirmation of implantation (through any of the presumptive signs of pregnancy, such as missed menses, or by a medically acceptable pregnancy test), until expulsion or extraction of the fetus." Reading the minutes of Committee on Terminology from 1966 through 1972, one cannot determine when or how or with what rationale, or in response to what new scientific discoveries the Committee on Terminology arrived at these new definitions, which were inconsistent with those in all standard and medical dictionaries and textbooks of embryology. But, as you can imagine, the "new definitions" have had a profound effect especially in relation to contraceptive technology. There is a debate about the mechanism of action intrauterine devices, birth control pills and "emergency contraception", a debate that effects the way in which many individuals from a pro-life persuasion regard the use of these measures. In good conscience these individuals will not use measures that may under certain circumstances be abortifacients. The current

response to this concern about the possible abortifacient effect of some birth control methods is reflected in the following statement in a recent article: "Some hold that the principal mechanism of action of IUDs is prevention of implantation of fertilized ova. Even if this were true, it would not constitute early abortion." (Rivera et al. 1999)

Abortion is the termination of a pregnancy. A pregnancy does not begin until implantation. Therefore, anything that occurs before implantation cannot be an abortion. Such is the logic. At the risk of being regard as a cynic, I am inclined to believe that the revised definitions of conception and the beginning of pregnancy were not the result of new scientific information about these phenomena. Rather they were intended as means of avoiding difficult ethical questions about the morality of termination of human life in the early stages of its development.

Another example is the revision of the meaning of *embryo* and the introduction of the term *preembryo*. These changes in the language occurred in conjunction with the research and diagnostic agendas that have evolved with the development of assisted reproductive technologies such as in vitro fertilization. This history is documented in the ACOG Committee Opinion entitled "Preembryo research: history, scientific background, and ethical considerations" published in 1994. In this document from the Committee on Ethics, the terms *preembryo* and *early preembryonic development* are used. The *preembryo* is defined as including the developmental stages from the first cell division of the zygote through the morula and the blastocyst and ending 14 days after the end of the process of fertilization. After this point there is an embryo. By so defining what an embryo is, most ethical concerns or legislative proscriptions about embryo research are avoided. Embryo research by its very nature involves procedures that are performed on embryos. If there is no embryo, then whatever research or procedure or manipulation is performed on preembryos is not embryo research because preembryos by definition are not embryos. Although evidence was put forth to support the concept of the preembryo (Grobstein, 1988; Bedate and Cefalo, 1989), it has been challenged by cellular biologists

working in the field of human embryology. In fact the leading textbooks of human embryology state that human development begins with fertilization, and that the zygote is the earliest stage of the embryo (Larsen, 1997; Moore & Persaud, 1998; Sadler 2000). The term *preembryo* is not mentioned in these textbooks, the most recent editions of which were published within the last 4 years. It is not certain who will prevail in this linguistic tug-of-war. A more important question is whether we will be better off if we let the truth shape the language or the language shape the truth?

Eric Blair, better known by his pen name, George Orwell, published a classic dystopian novel, *1984*. I dare say, almost everyone in this audience read this book as an assignment in either in high school or college. As you will recall, four ministries conducted the various functions of the government, the most important of which was the Ministry of Truth or, Minitrue, in the prevailing jargon known as Newspeak. Newspeak had replaced Oldspeak, which had been the common language of the people before the new order had evolved. WAR IS PEACE, FREEDOM IS SLAVERY, IGNORANCE IS TRUTH are examples of the transformations that had occurred in the language of Newspeak. This way of communicating thoughts and ideas was complementary to the state of mind known as "doublethink", which enables a person to no longer say the opposite of what he thinks, but to think the opposite of what is true, there no longer being any discrepancy between truth and falsehood. *1984* followed by four years and dramatized the concerns Orwell expressed in a provocative essay entitled "Politics and the English Language" published in 1946. In this essay he expressed his concern that much of the political chaos of that time occurred as a result of the decay of the language. He warned of the powerful impact the language has on behavior and the dangers of manipulating the language for political purposes.

I conclude with this observation by the late Dag Hammarskjöld (1955)

“*Respect for the word* is the first commandment in the discipline by which a man can be educated to maturity – intellectual, emotional, and moral.

Respect for the word – to employ it with scrupulous care and an incorruptible heartfelt love of truth – is essential if there is to be any growth in a society or in the human race.

To misuse the word is to show contempt for man. It undermines the bridges and poisons the wells. It causes Man to regress down the long path of his evolution.”

#### References:

American College of Obstetricians and Gynecologists. Preembryo research: history, scientific background, and ethical considerations. ACOG Committee Opinion, Number 136, April 1994.

American College of Obstetricians and Gynecologists. Fetal distress and birth asphyxia. ACOG Committee Opinion, Number 137, April 1994.

American College of Obstetricians and Gynecologists. Inappropriate use of the terms fetal distress and birth asphyxia. ACOG Committee Opinion, Number 197, February 1998.

Bean WB. Tower of Babel 1961. Arch Int Med. 1961;108:72-75.

Bedate CA, Cefalo RC. The zygote: to be or not be a person. J Med Philosophy 1989;14:641-645.

Bohr TW. Fibromyalgia syndrome and myofascial pain syndrome. Do they exist?. Neurol Clin 1995;13:365-84.

Eliot TS. Burnt Norton, *Four Quartets*. New York, Harcourt Brace and Company, 1943, p7-8.

Hammerskjöld D. *Markings*. New York, Alfred a. Knopf, 1964, p112.

Hughes EC (editor). *Obstetric Gynecologic Terminology with Sections on Neonatology and Glossary of Congenital Anomalies*. Philadelphia, F.A.Davis Company, p 299.

Gregory GA, Tooley WH. Intrauterine meconium aspiration. Clin Res 1970;18:218.

Grobstein C. Biological characteristics of the preembryo. *Ann NY Acad Sci* 1988;541:346-348.

Groopman J. Hurting all over. *The New Yorker*, November 13, 2000, pp 78-90.

Katz VL, Wells SR, Kuller JA, et al. Cesarean delivery: a reconsideration of terminology. *Obstet Gynecol* 1995;86:152-153.

Orwell G, 1984. New York, Harcourt Brace & Company, 1949.

Larsen WJ. *Human Embryology*, 2<sup>nd</sup> edition. New York, Churchill Livingstone, 1997.

Lazarus A. Munchausen's syndrome: a disorder by any other name? *Pharos* 1989;52(3):34-36.

Leonhardt T. Fibromyalgia – a new name of an old “malady”. Fatigue and pain syndrome with a historical background. *Lakartidningen* 2000;97:2618-2620.

Luce JM. The legacy of Baron Munchausen. *Pharos* 1978;41(4):19-23.

Moore KL, Persaud TVN. *The Developing Human, Clinically Oriented Embryology*. Philadelphia, W. B. Saunders Company, 1998.

Orwell G. "Politics and the English Language" in Orwell G. *A Collection of Essays*. San Diego, Harcourt Brace & Company, 1946, pp 156 - 171.

Petersen HG Jr., Pendleton ME. Contrasting roentgenographic pulmonary patterns of the hyaline membrane and fetal aspiration syndromes. *Amer J Roentgen* 1955;74:800-813.

Peterson R, Cefalo RC. Terms of confinement. *Obstet Gynecol* 1990;76:308.

Pelletier KR. *The Best Alternative Medicine. What Works? What Does Not?* New York, Simon Schuster, 2000, p 349.

Pritchard JA, Weisman R, Ratnoff OD, Vosburgh GJ. Intravascular hemolysis, thrombocytopenia and other hematologic abnormalities associated with severe toxemia of pregnancy. *N Engl J Med* 1954;250:89-98.

Quilligan EJ, Paul RH. Fetal monitoring: is it worth it? *Obstetrics & Gynecology* 1975;45:96-100.

Rivera R, Yacobson I, Grimes D. The mechanism of action of hormonal contraceptives and intrauterine contraceptive devices. *Am J Obstet Gynecol* 1999;181:1263-1269.

Sadler TW, *Langman's Medical Embryology, 8<sup>th</sup> edition*. Philadelphia, Lippincott Williams & Wilkins, 2000.

Seitchik J. Words, thoughts, and things. *Am J Obstet Gynecol* 1986;154:699-708

Speert H. *Obstetric and Gynecologic Milestones: Essays in Eponymy*. New York, Macmillan, 1958.

Ruddy S, Introduction to the rheumatic diseases. Dale DC & Federman DD (eds.) *Scientific American Medicine* Scientific American, 1999, 7-8.

Wolfe F. Fibromyalgia. *Rheum Dis Clin NA*. 1990;16:681-98.