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The Pedagogical Seminary

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/vzps20>

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Published online: 30 Aug 2012.

To cite this article: G. Stanley Hall (1908) The Medical Profession and Children, The Pedagogical Seminary, 15:2, 207-216, DOI: [10.1080/08919402.1908.10533894](https://doi.org/10.1080/08919402.1908.10533894)

To link to this article: <http://dx.doi.org/10.1080/08919402.1908.10533894>

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THE MEDICAL PROFESSION AND CHILDREN¹

By G. STANLEY HALL

Those were indeed remarkable days in which this institution was born. Thomas Jefferson was then midway in his second term as president of the United States. There were seventeen states in the Union, and Ohio, the last to be admitted, was four years old. The Mississippi River had been our western boundary till 1803, when the Louisiana Purchase more than doubled the area of the Republic. Only a year before your charter was granted, Lewis and Clark had returned from their 8,000 mile expedition exploring and establishing our claim to the Oregon region and making the Pacific Ocean our western boundary. Two years before, at the Battle of Trafalgar, the power of Spain in the New World as well as in the Old began to totter toward its fall and the way was prepared for the acquisition of Florida and the great Southwest which Aaron Burr had the sagacity to anticipate by what was charged to be a conspiracy, of which, however, he was acquitted in 1807. This and the Embargo Act, which closed all our ports to foreign trade and was repealed the same year, just a century ago, had crippled the East so that statesmen feared for the future predominance of the Atlantic States in view of the vast future they foresaw for the West, but also in 1807 Fulton's first steamer, the *Clermont*, made its first trip up the Hudson to Albany in thirty-two hours. Congress, too, had just provided for a national road from Cumberland, Maryland, to Ohio. The Barbary Pirates had been humiliated, the Chesapeake Incident and the Proclamation of 1807 ordering British armed vessels to leave our waters and other events leading on to the War of 1812;—these laid the foundations of our naval power and contributed to the supremacy of the eastern states and to consolidate the North and the South under the so-called Democratic Republican Party which had elected the great commoner of Monticello to his second term and which upheld his magnificent statescraft which culminated in his national education policy by which the foundations of your institution were influenced, if not indeed directly inspired.

You were the fifth, in time, of the 152 medical schools now chartered in this country, large and small, some alas, very

¹ Address at Centennial of the Medical School of the University of Maryland, May 30, 1907.

small in every sense of that pregnant diminutive. Baltimore had then a population of only 40,000 and you had already been struggling with a small organized faculty since 1807. Beginning with the graduating class of five in 1810, you will soon have 6,000 graduates in medicine from all parts of the country, many of them filling important positions in other states.

In quality and leadership, your record, too, is a proud one, showing that your helmsmen have held their tiller true between the Scylla of conservatism and the Charybdis of too radical progress. You were the first institution in the land to compel dissection of the cadaver, to give instruction in dentistry, and to establish independent clinics for the diseases of women and children, and for eye and ear troubles, and one of the first to establish a medical library, to teach hygiene and medical jurisprudence, and to provide clinical instruction in your own hospitals, open at all times to students.

Your classic old building, begun in 1812, which was long the most imposing architectural installation the profession could show in America, federation with the historic St. John's College at Annapolis, now under the able leadership of President Fell, the re-creation of the school of law in 1869, under the masterful hand of Professor Poe, the addition of a dental department in 1882, the affiliation of the Maryland College of Pharmacy, then sixty years old, in 1904:—these are milestones of an indeed unique progress by which a University with over 1,000 students from Baltimore alone has developed around the nucleus of a medical school, as in Salerno, the oldest of the mediæval universities. And your history as written by Cordell¹ and by Steiner,² is a valuable contribution to the educational records of the country's progress. Thus it is that you have kept pace with the marvellous advance of the country during the century, throughout which progress has been the dominant note.

In no department of life or thought, however, has the advance been greater than in the field of the theory and practice of medicine, and what contrasts are greater than those between methods in vogue when you began and now? Since then the microscope has created half a dozen sciences of objects, the existence of which was almost unknown a century ago, but which are most vital for life, health, reproduction and disease, sciences which have re-created both interpretation and treatment of symptoms; chemistry has become, in the language of one of its

¹Cordell, E. F. : *Historical Sketch of the University of Maryland*. Friedenwald, Baltimore, 1891. pp. 218.

²Steiner, B. C. : *University Education in Maryland*. Johns Hopkins, 1891.

experts, less a science than a group of sciences, and nowhere has their service been greater than to medicine. Anæsthetics, antiseptics, antitoxins, the ophthalmoscope, the stethoscope, the long war over the cadaver and the later one over duly controlled vivisection; all these things and many more have widened the scope and increased the efficacy and therefore prolonged the period needful for preparation for your profession. In view of all this, it is no wonder that Billroth urged that the history of medicine should be taught in every university as a part of the world's culture history. But a stranger cannot do justice to your history or a layman to the progress of medical science, and so, for the time allotted me, I venture to invite your attention to a few points in the broad field of social therapeutics which are of common interest to the physician and the scientific psychologist.

1. The first of these is the growing tendency to celibate life. From an exhaustive study of the statistics of the graduates of nine of our oldest colleges for men and of four for women it appears that ten years after graduation about one-fourth of the men and one-half of the women remain unmarried.¹ In our grandfather's days marriage was early and was contracted joyfully, almost as a matter of course, but now not only in our land, but in every country of western Europe, especially among those in easy circumstances, young men and women delay, deliberate, weigh the attractions of single and of wedded life, consider social and even pecuniary pros and cons till the golden dawn of youth advances to the high noon of maturity and, in Herbert Spencer's phrase, "The motives that make for individuation become too strong for those that make for genesis." The love of freedom, the desire to escape domestic responsibilities, club life, the increasing expense—all such motives should be as nothing to the fulfillment of the great laws of nature and of God. I am no advocate of most of the premature or unpractical measures that have been proposed, the taxation of bachelors, Galton's scheme of endowing wedlock for those inclined and pronounced fit by a commission, or even of forbidding it to any considerable classes in the community, despite the lessons of the Jukes and the Binswangers, Margarets, Aubry's Kerangel family and the tribe of Ishmael, least of all of any fantastic and demoralizing scheme of the trial marriage order, but I do maintain that every man without the handicap of grave hereditary disease and with even a comfortable wage should marry, and that our girls should be trained for home life rather than to secretly nurse the ideals of

¹ See "Marriage and Fecundity of College Men and Women," by G. Stanley Hall and Dr. Theodore L. Smith. *Pedagogical Seminary*, 1903, Vol. 10, p. 275 *et seq.*

single blessedness and to ape mannish ways, and that even those thus trained will thereby be best fitted for self-support, should that be their fate. If the cynical views of the wedded state too rife in the press and in conversation shake the healthful instinctive faith that joys are doubled and troubles halved, then I would even urge that as it is the citizen's duty to pay taxes and, if able-bodied, to take up arms if his country's life is at stake, so wedlock is a social, patriotic and religious duty which it should be a point of honor not to shirk. I plead for no rejuvenated platonic state with a tribunal before which every vigorous man from thirty on must seek certificate or exemption, yet even this has been advocated by serious publicists in Europe where more and better soldiers as well as toilers are wanted. I do not argue the case which many of our leading Catholic brethren are now pleading at Rome, that the clergy be no longer forbidden, but should be encouraged to marry, for the State and the church both need the offspring such men would give to the world. When man has as fully domesticated himself by civilization as he has domesticated the animals he rears with such wisdom and care, the voice of the medical profession will be heard upon this problem of the national and racial economy, for nothing in the world is quite so precious as heredity, and those with most ground for pride in their own ancestry should feel most keenly their obligations to transmit the sacred torch of life undimmed to future generations.

2. Close to this problem lies that of fecundity versus race suicide. President Eliot long ago showed that Harvard graduates did not reproduce their own numbers, so that if all the sons they rear went to Harvard that institution would decline, and the same is proven in the case of at least seven other northern colleges and is true to a still greater degree of women graduates. In France, the birthrate has for a long time but little exceeded the rate of death, so that that country is nearly at a standstill. For the white races throughout Australasia, the decline of birth is more rapid than in any other part of the world where such statistics are kept, although it has not yet quite reached the critical point of equilibrium. In England itself, which once stood near the head of all lands in fecundity, progressive sterility is now so marked as to cause anxious forebodings and medical and parliamentary commissions and various societies have been organized to study and to stem this downward tendency. In Italy, Russia and even in prolific Germany, the same decline is more or less pronounced, for the birthrate is tending toward the ominous ratio of twenty per thousand and various groups of learned, patriotic and philanthropic men, organized and unorganized, are pondering the causes in our own country. So many official voices have

spoken that eugenic clubs and Fabian societies are sure to be heard from by the great public in the very near future. This tendency is most marked among the old families of New England in the region of abandoned farms and decadent, moribund stirps. Those most prolific in this country were themselves or their parents or grandfathers were born in Europe. The most rapid increase is among the poorer classes and among those who inherited the promise of the great covenant of Jehovah with Abraham that if they would do his will their seed should be as the stars of heaven for multitude. Progressive sterility, Gibbon tells us, attended the decline and fall of ancient Rome, as it does the extinction of the many moribund stocks of primitive races. Sidney Webb marshals a mass of evidence to show that to-day the chief cause of this decline is "deliberate volition," and the late head of the Bureau of Statistics and Labor says that "This cause has more effect in reducing our population than war, pestilence, and all other causes combined." The old idea of large families has given place to that of small ones, and that of early to that of late child-bearing, so that, as Chandler has shown, the interval between generations is increasing, especially among the upper classes, while in the lower there is one generation more every two hundred years than among the former. Bohannon¹ and others have described the pathos of the only child in a family whose parents under the mistaken ideal expressed by the slogan *unus sed leo* lavish upon one child all the care meant to be diffused upon many in the effort to atone by nurture for the enfeeblement of nature and the thwarting of her deepest instincts. Heredity is not the only most precious and ancient form of all wealth and worth, but Huxley said that one ounce of it was worth a ton of education and modern dramas, and novels galore represent posterity as a great cloud of witnesses calling to us, demanding the right to be born and well born, with the desire to revere us as we revere our ancestors. The old families of the South, despite the hardships of the last generation and a half, have an enviable record compared with us of the old Yankee stock. It would be hard, indeed, if we descendants of the Puritans ever have to offer our *morituri salutamus* to you, the offspring of the cavaliers, but if that day ever dawns, we must admit that it is you and not us who have inherited the promise. For the true test of all the influence that make up civilization, as of domestication, is the producing and the bringing to fullest maturity of the best and most children. Real struggle for existence to-day is the struggle whose offspring should inherit the world and wield the ac-

¹Bohannon, Eugene W.: The Only Child in the Family. *Pedagogical Seminary*, April 1, 1899, Vol. 5, p. 475-96.

cumulated resources of civilization in the far future. The 1,500 millions that people the earth to-day are but a handful to those who have lived and also to those who shall crowd this teeming world when we are all dead.

3. But it is not enough to bear children; they must live and thrive. Amidst all the sin and woe of the world to-day, I know nothing more pathetic than the bitter cry of infants for milk, pure, fresh, abundant, and, above all, natural. In England and Wales, where 120,000 infants die each year, Newman¹ has shown that deaths during the first year are about five times as numerous among children fed upon cow's milk and artificial and proprietary foods as among those that are breast-fed. Bunge's² statistics show that in Berlin, despite the assertions of many physicians to the contrary, mortality is six times as great among those not fed at the breast as among those that are. In many cities of the Old and a few of the New World, comprehensive, special studies point to the same result, so that it is a conservative statement to say that those artificially fed are from three to six times as likely to die before the age of one year as those normally nourished. In Middle Europe, about one-half of the mothers are not able to nurse their children sufficiently during the first nine months of life, and this sad proportion is increasing, and of Bunge's 1,629 cases, mothers taken at random, two-thirds were unable. Röse's statistics are most comprehensive. Out of 157,000 individuals in his tables, those reared at the breast were not only more viable in the early stages of life, but they were heavier and taller at all stages of life. Far less were rejected as unavailable for the army and their longevity was greater. Not only this, but every three months of natural nursing increased each one of these advantages. So strong is German sentiment upon this subject that a law has been drafted, though not yet passed, heavily fining not only all mothers who can but will not nurse their offspring, but also those who advise them not to do so. It is very difficult to determine the proportion between genuine inability and disinclination. There is a certain stage when the best mother is the best nurse and when everything should be subordinate to this lacteal function. Without it not only physical but affectional motherhood is incomplete in its higher qualities. A race that thus neglects posterity has already begun to decline and even anthropometry shows that children thus handicapped in the earliest stage of their development suffer not only physical but mental and moral

¹ *Infant Mortality, a social problem.* Methuen, London, 1906. 326 p.

² *Die zunehmende Unfähigkeit der Frauen ihre Kinder zu stillen.* 3rd ed. Reinhardt, München, 1903. 32 p.

disadvantages throughout their lives. They are especially more prone to rickets and dental caries and to summer diarrhœas, the mortality from which latter seems to be from twelve to eighteen times as great for those artificially fed. The power of adequate lactation once lost by a mother is rarely regained in her posterity. There is now a general consensus among experts who have given this subject most attention that the chief cause of this first stage of sterility, for such it is, is voluntary, and this ominous social danger of our day, which the limited statistics at hand indicate, is greater in this country than in Europe, should be resisted by physicians by every means at their disposal.

This physiological separation from the mother at birth has often been compared in its effects to premature delivery, and it is becoming a distinctive feature of civilization, for the savage mother has abundant milk and to spare.

If infants of the future must be thus parted from their mother and the maternal function thus abridged and dwarfed, while our offspring become parasites of the cow or dependent upon proprietary foods which are of vegetable and not of animal origin, we must look well to the composition of the latter and control the transit of the former at every stage from the cow to the infant's mouth. Organic chemistry is yet in its infancy and is far from being able to reproduce such compounds as the lacteal fluid, which even Bunge calls one of the most complex and marvellous of all the products of nature containing in it everything that the body and soul of the child needs for the first year of life. Milk, as every one knows, is subject to very many kinds both of pollution and infection, and is a veritable trap for bacteria. No pasteurization or sterilization, condensation or any other process can give it anywhere near the value of mother's milk, whatever physicians who have not followed these recent studies or who are too complaisant with their patient's inclinations may say. On the infant's side, too, all these substitutes for nature's provision are more easily imbibed with too little effort and are often too abundant, so that over-feeding is more liable and the stomach, gorged with starchy food and with animal milk, with far too large a proportion of some ingredients and too little of others, readily becomes delicate and sensitive and the curve of mortality sometimes strikes upward in the sultry days of August several scores of points on the percentile grade. We have learned to prolong the average length of life among adults, have greatly lessened the death rate from various diseases, but infant mortality has not only not declined, but has slowly and steadily increased in all countries where such statistics are kept since the eighties of the last century. Thus, our infants cry and far too often die

for want of the food which nature has so marvellously prepared to meet their needs. You all know the new demands now urged upon many and adopted by some American cities of assuming as complete control of the milk as of the water supply and not only putting it up in suitable quantities for each meal, but giving it out at free public dispensaries to all who need it, and even providing nurses gratis to go about and teach its use, as well as the care of new born infants generally. After weaning and during all the growing years no food is probably more conducive to growth than an abundance of fresh cow's milk, and its adulteration or pollution is a crime without a name committed against childhood. The war for pure country milk, in cities is spreading to-day over the whole civilized world, all the more that the human supply is failing and it is now one of the most important problems of national health and prosperity. It should be one of the first items in the bill of rights for childhood.

4. When the child begins to pass from the home to the street or school, it no less needs the care of the new higher social medicine. Urban life is especially hard on childhood which needs the country brought to it in playgrounds and parks;—and every possible sunny, grassy, sandy, open space counts for increase of health and even life. If the very grave space of each needlessly dead city child were to be added to the play space of the living, there would soon be breathing room enough for exercises, games and gambols. Do I go too far or speak rashly if I suggest that what a municipality does for the health of its children is now a good measure of the standing and the influence of the medical profession in it? Surely, reduced Saturday and other holiday car fares to suburbs and parks, with as much free play over the grass as it will bear (for to what higher use can a good lawn be put?) open school yards every daylight hour when school is not in session, simple public out-of-door gymnastic apparatus and sand piles, the utilization of all unused lots where population is densest, public baths for children in summer and in winter, the opening of spacious private grounds to the children of the neighborhood at stated intervals, spacious sheds where children can play in bad weather, roof playgrounds, crèches and nurseries for young children of mothers away at work;—all these and more are now institutions of the new religion of health of which the physician is priest. These installations now bid fair to take their place, besides lying-in and children's hospitals, orphan houses, institutions for defectives and so forth, and what in all the world is more worthy of love and service than the bodies and souls of the children who bear our name and will soon take our places in the world's work?

The doctor now follows the child into the school, and not only tests eyes and ears, looks for adenoids, anæmia, chlorosis, curvatures, measures and weighs, detects dullards and sub-normals, perhaps has a tiny health book open for each child, with the co-operation of parents and teachers discovers infectious diseases in their early stages and removes those who are sources of contagion. He not only selects sites for school-houses, roomy, high, well drained, provides sufficient lighting and heating, ventilation, but now studies with great detail mental economy in methods of teaching, suggests the length and hour of the day of the hardest lessons, helps to keep off strain, over-pressure and fatigue and in general strives to make school buildings palaces of health and the curriculum a wholesome gymnastic exercise for strengthening sound mentality. The medical inspection of schools now extends in some places not only to every schoolroom, but to every child, whether in day or evening school, and teacher and pupil no longer dread, but welcome, the physician and he no longer indulges in indiscriminating and wholesale criticism of schools as the chief cause of hygienic defects, whether of individuals or in the community, and the parent welcomes his influence as it penetrates into the home.

5. Lastly, at puberty and through adolescence, or from the dawn of the teens into the early twenties another new field has lately opened rather suddenly before the physician, which may ere long become a specialty, as pediatrics has long been. The advent of this era is marked by all-sided mental and physical changes and there are new liabilities to disease and grave moral dangers unknown before. *Dementia præcox*, whatever else it is, is, at least, degeneration following arrest. The energies of growth are not sufficient for the full development which is due at this nascent period of man's higher life when nature normally builds a new and splendid story upon the far older and simpler foundation of childhood. The church has treated this stage of life by the cult of confirmation and conversion, and man is indeed born anew, for he now passes from the individual selfish life into the large one of the race and altruism and self-sacrifice are now normally at their very best. But the physician now has a wider and almost pastoral function to youth, to help keep them pure, to teach them that true honor is at bottom loyalty to the unborn, to shield them from the quacks that play upon this callow age with shameless advertisements, which too many newspapers admit, to assuage the fears, often grave but happily mostly, though not always, groundless, that sometimes sap the courage and zest of young men for years, fears that spring from ignorance and are removed by a little knowledge as by magic. I have collected nearly six

score pamphlets and books addressed to boys near the dawn of manhood, all well meant, a very few concise, direct and admirable, but mostly prolix, sometimes prudish and fairly infectious with self-consciousness. What most boys need is a very plain and very brief but always personal talk, perhaps one a year for a few years, from a physician who has some native fatherhood and a little philosophy in his soul and who has given careful attention to this subject. Most American boys reach this critical period singularly well posted in what they should not know about it and still more curiously ignorant of what it is important for them to know. We do seem at last approaching a period of sanity in the pedagogy of secret vice and the old extravagance, insincerity and hysteria about it is giving place to true knowledge and to common honesty. The general reading public now know, thanks to a few physicians who not only have the facts, but have felt the social duty of popularizing them, something of the nature and extent of the venereal peril, and we have been told how to approach our sons upon this shyest of subject at the shyest of all ages. There can be little doubt that since the day of primitive man the age of sexual maturity has been increased, and the later it came, the more the educational period lengthened. Despite the tendencies of city life to precocity and the reversal of this tendency, it is vital for the future of man that the prepubescent stage be not shortened, but prolonged by every available device of hygiene and regimen. Its vulnerabilities make it the most dangerous and its higher possibilities make it the golden age of human life. If one tithe of its dreams are realized in later life, the day of the superman is sure to come.

But on an occasion like this, one can but barely hint of themes so vast and momentous for the public weal. Let us hope that medical science is to-day, despite all its achievements, only in this golden age of promise. If we judged the future by the past, by the end of another century our most advanced knowledge would seem crude and most cherished ideals faint hearted. Because no profession rests so solidly upon the foundations of modern science, none has a better right to expect great things for itself in the future, and none can render such service in developing men of a higher type who will be able to realize high ideals in all departments of human life.