

Stockton-Hough (John)

THE
INFLUENCE OF SEX
OF
FETUS-IN-UTERO
ON LENGTH OF INTERGESTATION PERIOD

IMMEDIATELY FOLLOWING ITS BIRTH.

Forming a supplement to a paper, entitled: "An Inquiry concerning the Influence of the Sex of the Fetus-in-Utero on the . . . Condition of the Mother during Gestation, and of the Infant during Lactation, and subsequently;" published in the *Amer. Jour of Obstet.*, N. Y., February, March, May, and June, 1884. [Reprinted, 8vo, N. Y., 1884, pp. 70.] To which is added a list of the various papers published by the author.

BY
JOHN STOCKTON-HOUGH, M.D.



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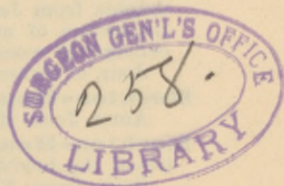
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LIST OF PAPERS AND REPRINTS

WRITTEN

By JOHN STOCKTON-HOUGH, A.M., M.D., MAG. CHEM.

Stockton-Hough (John) [of New Jersey, 1845-]. Prepotency—Sexual Elective Affinity—Non-Congeniality, or the Dynamic Differentiation of the Elements of Reproduction in the Human Species: the Cause of Relative or Differentiated Sterility. [An inaugural dissertation presented to the Trustees and Faculty of the University of Pennsylvania, for the degree of Doctor of Medicine, March 13th, 1868.]
[Not published.]

Stockton-Hough (John). Report of Cases of Trichiniasis.
Amer. Jour. Med. Sci. N. S. lvii, April, 1869. Pp. 566-567. *Ibid.*, lix., Jan., 1870. p. 282.

Stockton-Hough (John). Description of a New Vaginal Speculum. 8° pp. 4. 3 cuts. [Philadelphia, 1869.]
Repr. from: Am. J. Med. Sci., N. S., lviii., July, 1869. pp. 284-287.

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Repr. from: Amer. Jour. Med. Sci., N. S., lviii., Oct., 1869. pp. 409-412.

Stockton-Hough (John). Dysentery Followed by Abscess of the Liver.

Amer. Jour. Med. Sci., lviii., Oct., 1869. p. 428.

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Repr. from: Amer. Jour. Med. Sci., N. S., lix., Jan., 1870. p. 120.

Stockton-Hough (John). Renal Abscess Discharging Externally for Six Years. [Autopsy revealing calculus size of walnut.]

Amer. Jour. Med. Sci., July, 1870. p. 280.

Stockton-Hough (John). Intra-Uterine Medicator.

Amer. Jour. Med. Sci., N. S., lxi., Jan., 1871. pp. 292-293.

Stockton-Hough (John). Knife for Operation on Club Nails.

Amer. Jour. Med. Sci., N. S., lxiii., Jan., 1872. p. 280.

Stockton-Hough (John). New Gynecological Instruments [Speculum, etc.].

Jour. of the Gynecological Soc. of Boston. Vol. vi., Jan., 1872. pp. 18-28.

Stockton-Hough (John). Deaths from Cancer Occurring in Philadelphia from Jan. 1st, 1861 to Dec. 30th, 1870: Showing the relative proportion of males and females dying of this disease, and the percentage of women dying of cancer of the uterus.

Jour. of Gynecological Soc. of Boston. 8°. Sep., 1872. pp. 201-204.

Stockton-Hough (John). How to Prevent Paroxysmal Cough.

Amer. Jour. Med. Sci., N. S., lxx., April, 1873. p. 567.

Stockton-Hough (John). Longevity and Other Biostatic Peculiarities of the Jewish Race. 4°. N. Y., 1873. pp. 4.

Repr. from: N. Y. Medical Record, viii., May 15th, 1873. pp. 241-244.

Stockton-Hough (John). Eyes of Different Colors in Same Individual (cat).

Phila. Medical Times, iii., Aug. 30th, 1873. p. 756.

Stockton-Hough (John). On the Relative Influence of City and Country Life, on Morality, Health, Fecundity, Longevity, and Mortality. Social Science Assoc. of Philadelphia (Papers of), 8°. 1874, pp. 24; Penn. Monthly, Philadelphia, vol. v., Jan., 1874, pp. 28-52; Public Health Reports and Papers presented at the Amer. Pub. Health Assoc., 1873. N. Y., 1875. pp. 114-138.

(Continued on p. 11.)

THE INFLUENCE OF SEX OF FETUS ON LENGTH OF INTERGESTATION PERIOD IMMEDIATELY FOLLOWING ITS BIRTH.

THE following are additional tables and facts (based on nearly a thousand observations), showing that the intergestation period between girls is shorter than it is between the birth of boys, and that girls (*first children*) are born sooner after marriage than boys (*first children*)—the whole forming a supplement to a paper recently published by the author, entitled "An Inquiry, Etc."¹

Since the publication of the above-named paper, the author has been fortunate enough, through the untiring industry of his friend, Dr. A. C. W. Beecher, to have tabulated nearly one thousand observations on the length of the intergestation period by sexual differentiation, the deductions from which fully confirm the predictions already made in the paper above referred to.

In the compilation of these tables, genealogies were the only available source from which all the necessary dates could be obtained, and the "Genealogy of the Noble Family" presented these figures in the best form for our use.

Those families were selected which contained a fair proportion of both sexes, all those consisting only of boys, or only of girls, were excluded, as were also all instances of greater time than three years between births, as indicating illness, temporary separation, or as showing a certain amount of relative sterility. As families of exclusively boys or exclusively girls are exceptional, it is evident that separate tables should be constructed for each of these classes.

¹ "An Inquiry Concerning the Relative Influence of the Sex of the Fetus in Utero, on the Mental, Physical, Physiological, Pathological, and Developmental Condition of the Mother during Gestation, and of the Infant during Lactation, and Subsequently." AMERICAN JOURN. OBSTET., New York, February, pp. 113-135; March, 248-263; May, 502-517; June, 602-622, 1884.

In the 982 births tabulated from the "Genealogy of the Noble Family," extending over a period of 200 years [1635-1835], we find that there are:

98 girls	born as first children,	14 months and 14 days after marriage.
103 boys	" " " 17 " " 17 " "	" "
228 boys	following the birth of boys	at an average interval of 24 mo., 27 d.
201 " "	" " girls	" " " 24 mo., 16 d.
196 girls	" " boys	" " " 24 mo., 3 d.
156 " "	" " girls	" " " 24 mo.

In our paper referred to on the first page of this article, under Proposition 17, we have shown that the weight of a child at birth is influenced by the sex of the child which immediately preceded it, as may be seen from the following, elaborated out of Wernich. When a

Boy follows	a boy	he weighs on an average	3,430 grams.
" "	girl	" " "	3,383 "
Girl	" "	she	" " " 3,272 "
" "	boy	" " "	3,253 "
Boy precedes	" he	" " "	3,424 "
" "	girl	" " "	3,372 "
Girl	" "	she	" " " 3,266 "
" "	boy	" " "	3,200 "

By combining these tables, we have:

Boys follow	boys	at intervals of 24 mo., 17 d., and weigh	3,430 gms.
" "	girls	" " 24 " 16 " "	3,383 "
Girls	" boys	" " 24 " 3 " "	3,253 "
" "	girls	" " 24 " " "	3,272 "

The proportion of sexes in births was as follows:

First children,	103 boys and 98 girls,	or 105 boys to 100 girls.
All pregnancies,	532 " " 450 " " 118 " " 100 "	

This table shows that eleven per cent more girls are born in first pregnancies than in all the pregnancies combined.

It is a well-known fact that the proportion of girls in illegitimate children is always greater than among those born in wedlock, which may be accounted for in a great degree by their being for the most part first children, and of young mothers—though Schramm has shown from observations based on 1,050 cases, that of *old* primiparæ, the proportion of males among first children was greater than in births in general, viz., 124 boys to 100 girls, while births in general gave a proportion of only 107 boys to 100 girls.

Table Showing the Mean Time between Births, also the Mean Time between a Birth and the Next Succeeding Conception, According to the Sex of the Preceding and Succeeding Fetus, and the Number of the Pregnancy.

[Families of all boys or all girls excluded, as also any case of greater time than three years between births. 982 Obs. from the "Noble Genealogy," 17th and 18th centuries, average of about seven children to each family.]

ORDER OF SEXUAL DIFFERENTIATION.	FROM BIRTH OF BOY TO BIRTH OF BOY		FROM BIRTH OF GIRL TO BIRTH OF BOY		FROM BIRTH OF BOY TO BIRTH OF GIRL		FROM BIRTH OF GIRL TO BIRTH OF GIRL	
	M'ths.	Days.	M'ths.	Days.	M'ths.	Days.	M'ths.	Days.
Order & No. Preg								
From 1st to 2d b'th								
" 2d to 3d "								
Continuing in the same manner to the 20th.								
Series of 50 observations from each category, showing the uniformity of the result.	24	24	25	20	25	1	24	12
	24	25	25	2	25	2	25	2
	24	4	24	9	22	5	24	27
	26	2	23	19	24	6	20	19
Total all Pregnan.	24	27	24	16	24	3	24	00

MEAN INTERGESTATION PERIOD. [By subtr. 9 mos.]	FROM BIRTH OF BOY TO CONCEPT. OF BOY		FROM BIRTH OF GIRL TO CONCEPT. OF BOY		FROM BIRTH OF BOY TO CONCEPT. OF GIRL		FROM BIRTH OF GIRL TO CONCEPT. OF GIRL	
	15	27	15	16	15	3	15	..
	483 days.		472 days.		459 days.		456 days.	
Corrected for week shorter durat. gestat. with girls.	483	"	472	"	466	"	463	"
Each category in the order of frequency	228 births.		201 births.		196 births.		156 births.	
Total No. observa.	982 observations in all.							

From Marriage to Conception and Birth of First Children by Sexes.

Mean time from marriage

To the birth	of the first child when a girl (98 obs.),	14 mos. 14 days.
" conception	" " " " " "	5 mos. 14 days.
" birth	" " " " boy (103 obs.),	17 mos. 17 days.
" conception	" " " " " "	8 mos. 17 days.

Hence those women who bore girls in their first pregnancies conceived 3 mos. and 3 days sooner after marriage than those who gave birth to boys, corresponding with the greater rapidity with which girls follow girls, as compared with any other order or combination of the sexes.

Ansell's table,¹ based on 25,000 observations (all pregnancies) gives the average time between marriage and the birth of the first child as 1.32 years (nearly 16 months). In another table, based on 6,035 observations corrected for still-births and twins, he has shown that "the mean interval between marriage and the birth of the first child is nearly sixteen months." It will be interesting to compare our table with the above. We found that

From marriage to birth of girl was	14 mos. 14 days.
" " " " " boy "	17 mos. 17 days.
	<hr/>
	31 mos. 31 days.
Average both sexes.....	16 mos.

This average of 16 mos. is almost exactly the same as found by Ansell, based on a large number of cases among women in another country.

From an examination of those cases (among the 982 observed) where the interval between marriage and the birth of the first child and the interval between subsequent birth was less than nine months (the usual period of utero-gestation), we find that, following the rule already determined for the general averages, viz., where a child is born in less than nine months after marriage, the girls are on an average born in eight months, and the boys in eight and one-half months after marriage—the difference in the period of gestation with the female sex, as compared with the male, being about a week ($8\frac{1}{2}$ days), which corresponds with the difference for normal periods, as shown in our paper, "An Inquiry, etc.," as may be seen from the following:

¹ Duncan: "On Sterility in Woman." London Lancet, Feb. 24th et seq., 1883.

Time of Marriage to the Birth of First Child.
(Abnormally short.)

GIRLS.			BOYS.		
8 months	27 days.		8 months	20 days.	
8	"	28	7	"	11
6	"	4	8	"	26
8	"	6	7	"	20
8	"	20	8	"	24
8	"	28	8	"	23
8	"	3	8	"	16
6	"	24			
8	"	24			
7	"	13			
7	"	12			

Average, 8 months.

Average, 8 months 8½ days.

Baust,¹ in his tables, found that boys were carried seven days longer than girls; all of which tends to confirm the generally received opinion, that males are carried longer than females. Among bees this difference is further illustrated in a marked and invariable manner—queens arriving at perfect development in 16 to 18 days; workers (imperfect females), in 21 to 23 days; and drones (males), in 24 to 26 days.

Among the 201 first children, in only one instance (a boy), did the birth take place exactly 9 months after marriage.

A woman had a girl born 10 months and 11 days after marriage, followed by another girl in 11 months 28 days, this followed by a third girl in 11 months 28 days; then a boy in 20 months 7 days; then a girl in 16 months 27 days; then a boy in 40 months 11 days.

A mother of 10 children gave birth to her first child (a boy) 8 months 23 days after marriage; her eighth child (a girl) was born 9 months 5 days after the seventh (a boy).

The average interval between the birth of her 10 children was 18 months 20 days.

In one case, a boy followed a boy in 11 months 1 day.
" " " " " " " " " 10 " 13 days.

av. 10 months 22 days.
" " " " girl " " " in 9 " 5 "
" " " " " " " 10 " 1 day.
" " " " " " " 8 " 0 "
" " " " " " " 7 " 1 "

av. 8 months 17 days.

¹ "Willkürliche Zeugung." Stuttgart, 1870, p. 50.

In all these cases, it is fair to presume that the children were born alive, as they were *named*; whether they were premature we had no means of knowing; and how long they lived was not noted by the compiler, even where it was stated.

Notwithstanding the fact here shown, that when one gestation follows another with the average degree of frequency and under normal conditions, the intergestation period is longer between the birth of boys (one following another) than between girls; yet the investigations of Kleinwächter¹ made it appear that where the intergestation period is *unusually long*, the proportion of girls to boys greatly preponderates over the usual proportion among the births occurring at the average ordinary interval in the same place. As no mention is made of the sex of the *preceding* birth, this observation has little value for purposes of comparison with our statistics. I introduce it simply as an observation on the influence of an unusually long intergestation period on the sex, weight, length, etc., of the succeeding child.

We have tabulated Kleinwächter's material with the following result:

Duration of Inter- gestation period (years).	{	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Number of Women.		34	105	88	41	33	26	22	15	6	9	5	5	2	1	2	1

It reads as follows: Of 395 child-bearing women, 34 had an intergestation period of 1 year, 105 had an intergestation period of 2 years, etc., between the birth of the first child and the conception of the second.

Kleinwächter divides these cases into two groups: the first, intergestation period from 1 to 5 years [301] (average age 26.7 years); the second, 6 to 16 years [94], average age 31.1 years. Those having a greater intergestation period than 10 years have an average age of 34.28 years.

Intergestation period from:

¹ Kleinwächter: "Der Einfluss der Dauer der Geburtspause auf die Geburt der Zweitgeschwängerten." Zeitschr. f. Geburtsh. u. Gynäkol., XI. Bd., pp. 221-237.

1 to 5 years,	167	boys and 138 girls,	or 121 boys to 100 girls.
6 " 16 "	99	" " 50 " " 98 " " 100 "	
10 " 16 "	12	" " 15 " " 80 " " 100 "	
1 " 5 "	242	births; weight, 3,284.50 grams; length, 50.91 cms.	
6 " 16 "	73	" " 3,296.11 " " 52.51 "	
1 " 5 "	301	" " 4 cases of twins, or 1.32 per cent.	
6 " 16 "	60	" " 5 " " " " 5.31 " "	
1 " 5 "	301	" " 5 " " malformation 1.66 per cent.	
6 " 16 "	94	" " 6 " " " " 6.38 " "	
1 " 5 "	305	" " 4 " " stillbirths 1.31 " "	
6 " 16 "	99	" " 10 " " " " 10.10 " "	
1 " 5 "	208	" " Duration of labor, 9.99 hours.	
6 " 16 "	60	" " " " " " 12.03 " "	

From an examination of 74 cases of extrauterine gestation, Dr. Parry¹ found that these women had not previously conceived in periods varying from 5 to 18 years; and of these 74 children, 41 were boys, and 33 girls (124:100).

In seeking for an explanation of the greater rapidity with which girls succeed girls, as compared with boys following boys, we are disposed to attribute this disparity to two causes: First: *The part of the woman* in the begetting of males is a higher (developmentally), more difficult, and as we have shown in the paper referred to, a more tedious (duration of gestation longer) rôle. Second: We have also shown, *loc. cit.*, that gestation with a female fetus arrests to a greater degree the growth and development of the female parent, and determines in her a genetic (child-bearing) tendency, which is antagonistic to growth and development. The woman is thus put in a physical condition in which she is more prone to conceive than the condition in which she is left after the birth of a boy. The sooner she conceives after having given birth, the less she has recovered from the physical exhaustion of her previous gestation and lactation, and consequently she is more likely to conceive of a female than of a male, the latter being more difficult and requires a better physical condition.

Under the influence of feebleness, degeneracy, or disease, each sex tends to produce a larger proportion of offspring of its own sex.

¹ "Extrauterine Gestation." 8vo. Philadelphia, 1876, p. 82.



LIST OF PAPERS AND REPRINTS

WRITTEN

By JOHN STOCKTON-HOUGH, A.M., M.D., MAG. CHEM.

Stockton-Hough (John). Longevity, or the Relative Viability of the Sexes; particularly with a view to the relative liability to the inheritance of certain transmitted diseases—considered in relation to the selection of life insurance risks, with a view of exhibiting the unjustness of charging higher rates for women. Illustrated in part by the vital statistics of Philadelphia for the eleven years ending with 1871. 4°. N. Y., 1873. pp. 9.

Repr. from: New York Medical Record, viii., June 16th and July 15th, 1873. pp. 297; 353.

Stockton-Hough (John). Statistics Relating to the Births, Deaths, Marriages, and Movement of Population in the City of Philadelphia from Jan. 1st, 1861, to Jan. 1st, 1871. 8°. Philadelphia, 1873. pp. 24, Papers of Social Science Assoc., of Philadelphia.

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Repr. from: New York Med. Record, viii., Aug. 15th; Sept. 15th; Oct. 15th; Nov. 15th, 1873. pp. 409; 465; 521; 577.

Stockton-Hough (John). The Temperature of the Sexes; an Indication of Development.

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Stockton-Hough (John). On the Relationship Between Growth and Development and the Sexual Condition of Plants. 8°. Essex, Mass., 1874. pp. 12.

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Annales d'Hygiène Publique et de Médecine Légale, Paris, Jan., 1875, Tom. xliii., 2me serie. pp. 118-140.

Stockton-Hough (John). An Inquiry Concerning the Relative Influence of the Sex of the Fetus-in-Utero, on the Mental, Physical, Physiological, Pathological, and Developmental Condition of the Mother during Gestation, and of the Infant during Lactation and subsequently. 8°. N. Y., 1884. pp. 70. [50 copies.]

Repr. from: Amer. Jour. Obstet., N. Y., xvii., Feb., March, May, and June, 1884. pp. 113-135; 248-263; 502-517; 602-622.

Stockton-Hough (John). The Influence of Sex of Fetus-in-Utero on Length of Interestation Period Immediately Following its Birth. Forming a supplement to a paper entitled: "An Inquiry Concerning the Sex of the Fetus-in-Utero on Condition of the Mother During Gestation [etc.]" 8°. pp. 11. N. Y., 1886.

Repr. from: Amer. Jour. Obstet., N. Y., vol. xviii., 1886. pp. 9.

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Philadelphia Medical Times, xv., Oct. 31st, 1885. pp. 92-94.

