

THE RELATION OF CONCEPTION AND BIRTH TO  
SEASON AND HOUR.\*

BY  
CHARLES S. WHITE, M.D.,  
Washington, D.C.

It frequently falls to the lot of every obstetrician to spend many weary hours of the night patiently awaiting the advent of an heir. His life has truly become, as Dr. King says, "A melancholy attendancy upon misery, a mean submission to peevishness, and a constant interruption to pleasure."

There is a popular idea among the laity, and physicians as well, that the great proportion of labor cases terminate at night, frequently after midnight; some explain it not as a mere coincidence, but as nature's effort to protect the eyes of the infant from the glaring rays of the sun. For a well established fact, theorists readily propose a "raison d'être." With a view to refuting or more substantially fixing this long cherished conviction, I have analyzed, without bias, 4,000 consecutive confinements in which these data were available. The cases occurred at Columbia Hospital, Washington, between 1880 and 1901, and I am omitting the cases in which there was reasonable doubt about the hour, such as the absence of "A. M." or "P. M." The hour specified refers to the time of the completion of the second stage. Instrumental cases are included, but abortions are excluded, as the latter are, to a surprising extent, criminal in nature, hence without bearing on natural laws.

A classification into white and colored was made in order to estimate the influence of race. We shall first consider the day as divided into two periods of twelve hours each, from 8 A. M. to 8 P. M. and 8 P. M. to 8 A. M.

TABLE I.

Periods.	White		Colored.		Total.	
	No.	Per cent.	No.	Per cent.	No.	Per cent.
8 A. M. to 8 P. M. . . .	780	50.3	1,199	49	1,979	49.4
8 P. M. to 8 A. M. . . .	770	49.7	1,251	51	2,021	50.5
Total . . . . .	1,550	100	2,450	100	4,000	100

\*Read before the Washington Obstetrical and Gynecological Society, April 7, 1905.

According to the above table, in 1,550 white cases 0.3 per cent. more than one-half the cases occurred during the day, while in the other group of 2,450 cases 1 per cent. more than one-half occurred during the night. Just why there should be a larger number of colored cases terminating at night cannot be ascribed to hereditary influences. The opposite results obtained in the two races, while trivial, lose their significance if we stop to consider that the races have been blended by intermarriages and immorality. The total percentage is, perhaps, a better guide, and we find that a scant 1 per cent. more cases occur at night than during the day. I believe this fraction may be disregarded and no importance attached to it.

Should we divide the day and night into periods of eight hours each, namely, 6 A. M. to 2 P. M., 2 P. M. to 10 P. M., and 10 P. M. to 6 A. M., using the same cases, Table II. will show that the greatest variation is between the 2 to 10 segment and the 10 to 6 in the colored. The third period (6 A. M. to 2 P. M.) is only 0.6 per cent. below one-third of the cases.

TABLE II.

Periods.	White.		Colored.		Total.	
	No.	Per cent.	No.	Per cent.	No.	Per cent.
6 A. M. to 2 P. M. . .	498	32.1	810	33.	1,308	32.7
2 P. M. to 10 P. M. .	524	33.8	777	31.7	1,301	32.5
10 P. M. to 6 A. M. .	528	34.1	863	35.2	1,391	34.7
Total . . . . .	1,550	100	2,450	100	4,000	99.9

Taken collectively, a slight preponderance of the cases occur between 10 P. M. and 6 A. M., 1.4 per cent. more than one-third, hardly enough to lay stress upon. Probably another series of several thousand cases would have the largest percentage during one of the other periods. At any rate, the statement that the majority of births occur at night should be given no prominence, or else be qualified. A proportion as small as I have shown may be accidental. Why such a popular fallacy exists is only problematical and may be accounted for in a number of ways. Cases occurring at night necessitate, for the physician, hours of work usually spent in sleep or recreation; it means a derangement of a routine, a broken compensation, and such an event certainly impresses itself more forcibly than those occurring in the bustle of a busy day. They stand boldly out from other cases, as we associate them with the disagreeable sensations. We know that only our vivid dreams, among our countless thousands, are sufficiently impressive to be

retained in our memory until even the following day, and so we may presume that it is only the night cases, with their tediousness and uncertainty that blaze their way through the forest of cerebral cells to find a resting place whence they may be summoned.

It is also a common belief among the professional inmates of a lying-in hospital that one labor case heralds the approach of others, that there is a mysterious influence communicated from the first to others in waiting; and there seems to be some ground for it. I have frequently witnessed a "wave" of uterine pains sweep over a maternity ward, and several cases go into active labor at once, followed by a lull, and another uterine storm. It is an interesting condition; the causative agent of which is probably suggestion, but that is a field for others than the obstetrician.

For generations it has been supposed that births, and necessarily conceptions, occur in relatively greater numbers during certain months or seasons. This may be the result of old statistics applied to modern conditions without investigation. It has been stated, and apparently substantiated, that the greatest number of conceptions occur in April and May, and while this may apply to other vertebrates than man, the law seems shaken by looking into the facts. My study, while not comprising sufficient cases to satisfy the skeptical, seems to cover a reasonable number upon which to venture an opinion.

The spring months associate themselves in our mind with growth and multiplication of species in plant life, the mating of birds, and even the poet sings of it: "When a young man's fancy lightly turns to thoughts of love." The rutting of animals is typical. The Esquimaux, we are told, after their six months' night, devote the first three or four weeks of the long day to a courtship which usually terminates in marriage. It was the custom of Rome, Greece, India, North and South America to set aside days or weeks to a festival devoted principally to worship at the shrines of Bacchus and Venus. In ancient Peru, the orgy was a five days' feast, terminated by a blast from a trumpet, a signal for the men and women, assembled entirely nude, in a public square, to race for a rendezvous. Those maidens who were overtaken by the youths in the chase, freely surrendered themselves to the passion of their captors. Analogous customs existed among the Russians, Bohemians, and Bengal tribes, but these practices have not survived.

Baron de Montesquieu,<sup>1</sup> writing some centuries ago, did not question the influence of season, and, more particularly, of climate, upon morality: "From this delicacy of organs peculiar to warm

climates it follows that the soul is most sensibly moved by whatever relates to the union of the two sexes. In northern climates scarcely has the animal part of love a power of making itself felt. . . . If we travel toward the north, we meet with people who have few vices, many virtues, and a great share of frankness. If we draw near the south, we fancy ourselves entirely removed from the verge of morality; here the strongest passions are productive of all manner of crimes, each man endeavoring, let the means be what they will, to indulge his inordinate desires."

Attention to periodicity of birth-rate was first noted in 1767 by Wargentín, but the subject received scant notice until Quetelet verified his statements, showing maximum of births in February with maximum of conceptions in May. Wappans confirmed these statements from the birth-rate of Europe, though he found them modified by harvest work, epidemic diseases, and church laws. Other observers have come to the same conclusion. The winter months of Russia are the most prolific, ascribed to the stringent secular traditions and severely observed feasts.

Haycroft, from data of Scotland, concluded that the conception curve paralleled the temperature curve, and for every average monthly rise of 1 degree F., the birth-rate increased 5 per cent. Mayr states that the greatest number of conceptions in Europe occur in May; the fewest in September.

Ellis<sup>2</sup> finds a maximum in April, May, and June, which bears a definite relation to the fastigium of the curve of seminal emissions during sleep as determined by Nelson. The demand for books at public libraries has been used as an index of sexual impulses and the trend of such thought would appear to be more prevalent in the spring.

Ellis further says, "thus, while the sexual climaxes of spring and autumn are rooted in animal procreative cycles, which in man have found expression in primitive festivals, these again perhaps strengthening and developing the sexual rhythm, they yet have a wider significance. They constitute one among many manifestations of spring and autumn. They resemble those periods of atmospheric tension of storm, and which accompany the earth's rhythm, and they may fairly be regarded as ultimately a physiological reaction to those cosmic influences."

Feffingwell's<sup>8</sup> table of births in England and Wales for each quarter of the year during four decades conclusively points out that the birth-rate per thousand living persons is greater in the first

two quarters, therefore, the conceptions must have occurred at other periods, a wide variance from Mayr's statistics.

Leffingwell says: "Legitimate births, therefore, appear to be slightly under the influence of seasons. The difference in reproductive proclivity is not great, but is fairly suggestive of permanent influences. More striking is the evidence of periodicity of those relationships which occasion illegitimate births. If in the earlier stages of human development out of animalism there did exist the stronger instincts of the brute, we might expect to find the trace to-day whenever passion is more powerful than the respect due to custom, relation, and law."

Englemann<sup>4</sup> has dissipated the erroneous views formerly entertained that menses first appeared in warm climates and were retarded as the Arctic regions were approached. As a matter of fact, climate exerts no influence.

In the same series of cases from which I have taken the data concerning the hour of birth, effort was made to associate the maximum conceptions with season or month. They were classified into white and colored, legitimate and illegitimate. There was absolutely no appreciable relation to season. Dr. W. F. R. Phillips, of the Weather Bureau, kindly furnished the average monthly temperature and humidity from 1880 to 1901 inclusive, and by a strange coincidence, the government observations were made within a hundred yards of the delivery ward of the hospital. A constant ratio could not be established on this basis. February seemed as fertile as May, and an exceptionally warm month was not expressed in family additions subsequently.

This seems to be and is a contradiction to the generally accepted beliefs. Unquestionably our social environments, duties, and habits are responsible in a great measure for the deviation. At this day we can in no way be compared with primitive types; mechanical inventions have almost obliterated the discomforts of climatic changes; ecclesiastical laws have prohibited marriages during specified periods; we have become creatures of habit, and fashion has almost decreed the months when marriages shall be consummated. The rearing of a family often interferes with the pleasure of life, and "race suicide" has become a popular phrase.

The increasing knowledge among the public of the methods of inducing abortion has been the chief factor in diverting normal pregnancies. A popular textbook<sup>5</sup> states that one pregnancy in every five terminates in miscarriage; whereas in former editions of this work the ratio was placed at one in twelve. This emphasis,

however, is hardly necessary; the condition is only too well known to the obstetrician and gynecologist. In child-bearing women, parturition is regulated with almost mathematical precision.

The foregoing statements may not be accepted without further proof. We are loath to replace fond fancies with uninteresting facts, and it is possibly far better that we be conservative and lean toward safe and sound figures which cannot be assailed, in order to avoid statistical hysteria.

#### LITERATURE.

1. De Montesquieu: *The Spirit of Laws*.
2. Ellis: *Studies in Psychology*.
3. Albert Leffingwell: *Illegitimacy and the Influence of Seasons Upon Conduct*, 1892.
4. *American Gynecology*, II, 3-328. "Age of First Menstruation at Pole and Equator."
5. A. F. A. King: *Manual of Obstetrics*, 1903.