

CORSON (E.R.)

Dr John S. Belong U.S.A.

With the compliments of E. R. Corson

VITAL EQUATION

al

OF THE

COLORED RACE

AND ITS

FUTURE IN THE UNITED STATES

BY

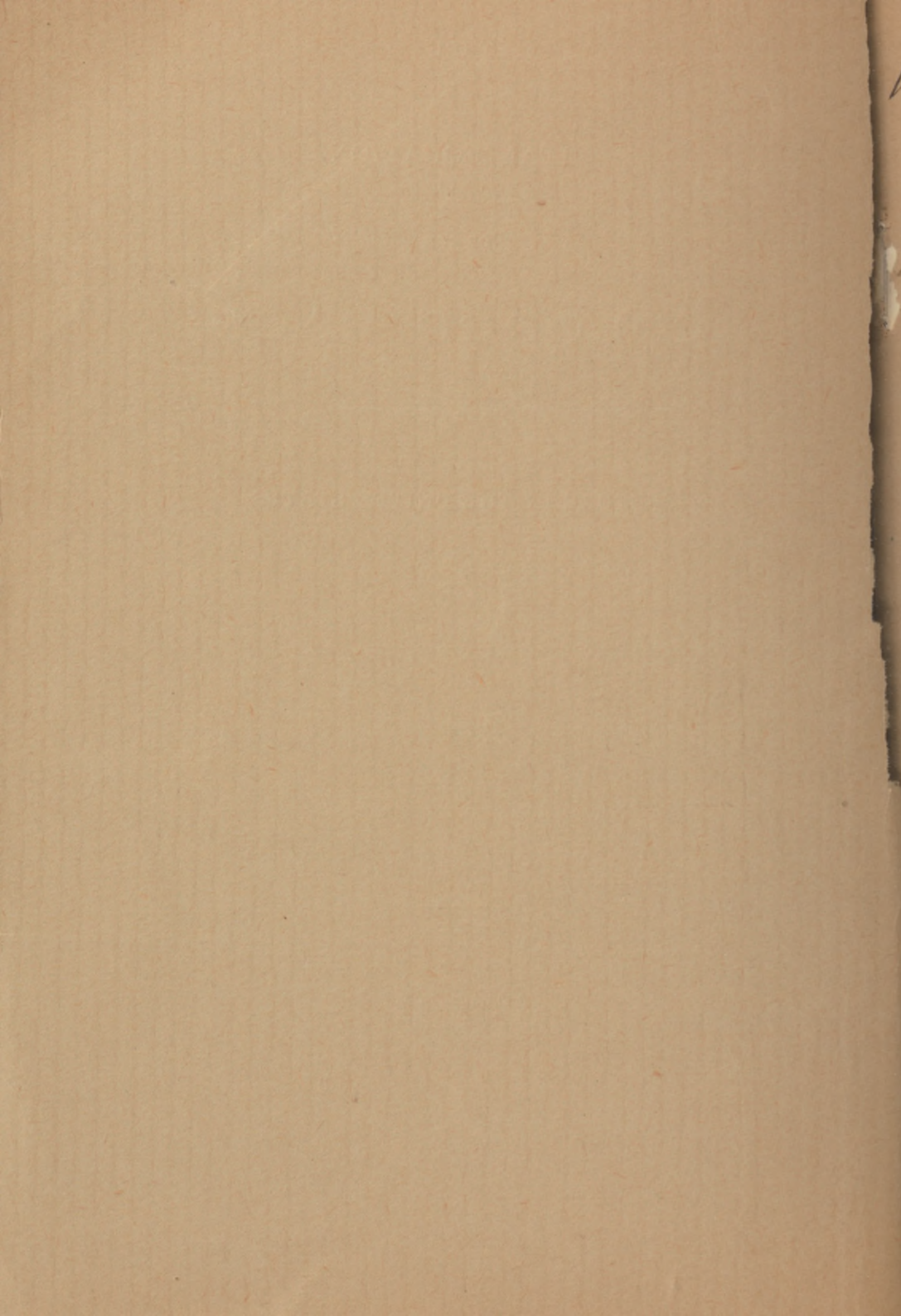
EUGENE ROLLIN CORSON, B.S., M.D.

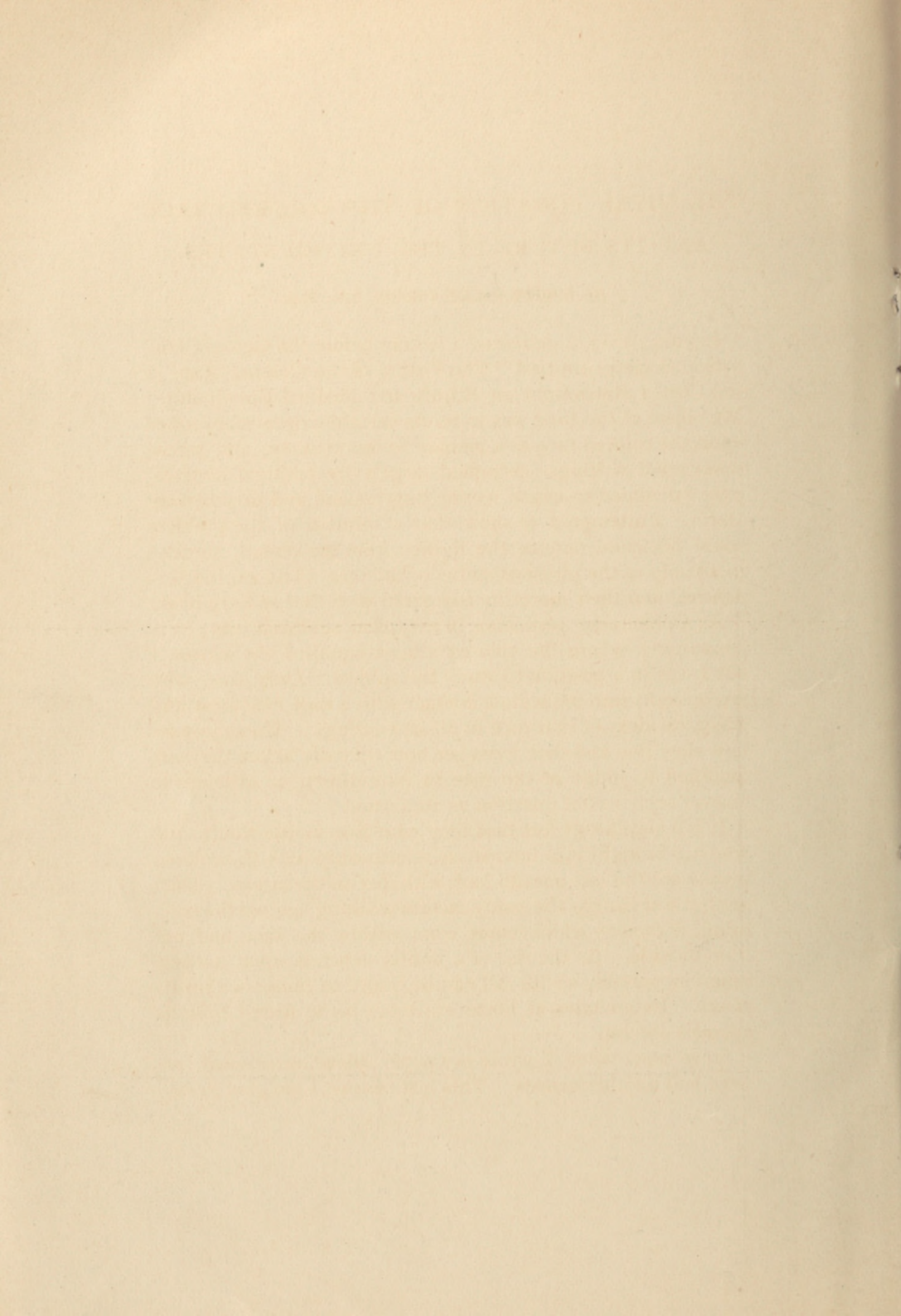
presented by the author -

REPRINTED FROM
THE WILDER QUARTER-CENTURY BOOK

ITHACA, N. Y.
1893







THE VITAL EQUATION OF THE COLORED RACE
AND ITS FUTURE IN THE UNITED STATES.

By EUGENE ROLLIN CORSON, B.S., M.D.

In June, 1887, I delivered a lecture before the Georgia Historical Society, entitled "The Future of the Colored Race in the United States from an Ethnic and Medical Standpoint." My object at the time was to refute certain writers who looked upon the colored race as a menace to our country, and whose sensational writings, prompted largely by political motives, were calculated to cause wrong impressions and unnecessary alarm. I attempted to show that a solution of the problem could be found outside the figures from the census, namely, in a study of the physical status of the race, their morbid tendencies, and their mortality compared with that of the whites.

As a practicing physician in a typical southern city, in a community where the colored almost equalled the whites, I felt I was in a position to study the subject. Only they who are brought into immediate contact with a race can form any adequate ideas of that race in all its bearings. They must see how they live and they must see how they die before they are qualified to judge of the race in its entirety, or attempt to answer such a vital question as its future.

It is a significant fact that they who live in the South and who are brought into immediate relationship with the colored people are the last ones to look with fear on the future. They see but too plainly the many factors working against the race, inimical factors which come from within the race and not from outside. As the rise of a nation depends upon its own inherent powers, so its fall can be traced to causes within its ranks. Its enemies at home are more to be feared than its enemies abroad.

Since 1887, when I wrote my paper above mentioned, we have had another census. This last census, I am glad to say,



has fulfilled almost in every way the predictions then made, and I trust that with a fuller treatment of the higher mortality among the colored as compared with the whites, and the causes which have produced it, we can see with greater distinctness the future of the race.

In this present paper then I shall go over largely the ground treated in my first paper. I shall introduce the results of our last census, so far as the mere enumeration goes,—for the volumes on mortality and vital statistics are not yet out,—and finally elaborate certain pathological lines which were then but faintly drawn. This, I hope, in conjunction with the mortuary tables of our own city, will give us a fairly clear idea of the vital equation of the race, and by vital equation I mean that quantum and power of vitality which maintains individual life, for it is upon individuation, I believe, that racial strength and progress depend. And with high individuation goes a comparatively low death rate, especially in infancy and early childhood, and a high general average of age. Though the birth rate may be comparatively low, more infants born become mature and perfected individuals; there is more vitality for growth and development; racial traits and characteristics are stronger, with more power to hold the race together as a race. There is no better evidence of the great vitality of the Jewish race, for example, than their power to preserve their racial traits all over the world, and in spite of the many years of persecution and separation which they have had to endure.

After the tenth census of 1880, attempts were made to predict the future of the colored race from a few figures and the multiplication table. Gaps were filled in to suit each individual case and figures marshalled to suit the thesis. It was surprising how some allowed themselves to be run away with by these figures.

Professor E. W. Gilliam contributed an article to the *Popular Science Monthly* for Feb. 1883, entitled "The African in the United States" in which he drew for us a lurid picture of the future of our country. Here are his figures :

Whites in United States in 1880 (in round numbers),	42,000,000
Whites in United States in 1985 (in round numbers),	336,000,000
Northern Whites in 1880,	30,000,000
Northern Whites in 1985,	240,000,000
Southern Whites in 1880,	12,000,000
Southern Whites in 1985,	96,000,000
Blacks in Southern States in 1880,	6,000,000
Blacks in Southern States in 1980,	192,000,000

This is figuring with a vengeance. We may well tremble for the future of our country if these figures are even approximately correct. Their menace, Professor Gilliam thinks, is intensified by the second factor in his arguments, namely the impossibility of fusion of whites and blacks.

Mr. Albion W. Turgée attempted to reach the same conclusions in a book entitled "An Appeal to Cæsar." His book is a strange medley of figures, hypotheses, and circus-bill English. It is wholly unnecessary for us to quote from these writers or give any resumé of their arguments. It will not be amiss, however, to quote at some length from Mr. Henry Gannett's refutation which appeared in an article in the *Popular Science Monthly* for June 1885, entitled "Are we to become Africanized?" He gives here their arguments and refutes them by their own figures. In refutation of Professor Gilliam he writes:—

"An analysis of the author's curious method of deducing these results will, however, dispel this frightful vision of the future. The increase of white population between 1870 and 1880 was slightly less than ten millions. The number of immigrants during this period was a little in excess of two million eight hundred thousand. Subtracting the latter from the former, there is left a number which is 23 per cent. of the population in 1870, not 20 per cent., as Prof. Gilliam has it. But what does this 20 or 23 per cent. (it matters not which) represent? Certainly not the increase of native whites, as he interprets it. The census gives directly the numbers of native whites in 1870 and in 1880, and the proportional gain of this class during the decade was not less than 31 per cent. These are the figures he should have used in making his calculations.

“Now as to the increase of the colored element. Professor Gilliam at the outset, deducts from its rate of increase 5 per cent., representing about a quarter of a million persons, on account of the imperfections of the census of 1870. Concerning the omissions of this census little is known, except that they were generally distributed through the cotton States, were largely, if not mainly, of the colored element, and of that element, approximated nearer three-fourths of a million than one-fourth, and certainly exceeded half a million. Professor Gilliam's subsequent addition of 5 per cent. 'as an obvious consideration points to the conclusion that the blacks will for the future develop in the South under conditions more and more favorable,' certainly is not warranted by the facts or the probabilities, and, as we are reasoning from what has been and is, and not from what may be, it looks very much like begging the whole question.

“Correcting Professor Gilliam's statements, it appears that the ratios of gain during the past decade were, as nearly as can be known, as follows: For native whites, 31 per cent. ; for blacks, not above 25 per cent.

“But all such comparisons, based upon the results of the ninth census, are utterly worthless. No reliable conclusions regarding the increase of negroes can be drawn from a comparison in which these statistics enter. The extent of the omissions can be a matter, within certain wide limits, of conjecture only. The only comparisons which yield results of any value are those made between the statistics of the eighth and tenth censuses. That the former was, to a certain slight extent, incomplete, is doubtless true, especially in regard to the colored element, but the omissions were trifling as compared with those of the ninth census. A comparison between the results of the eighth and tenth censuses shows the advantage to be clearly in favor of the native whites, who increased 61 per cent. in the twenty years, while the colored element increased but 48 per cent. This great increase of the native whites was effected in spite of the fact that the ranks of the adult males were depleted to the extent of over a million by the casualties of war, which the negroes scarcely felt.”

In reply to Mr. Tourgée he writes:—

“In ‘An Appeal to Cæsar,’ by Judge Tourgée, the question of the future of the colored element is discussed from a somewhat different point of view. Without committing himself as to the increase or decrease of the colored element in the country at large, in proportion to the whites, the author finds, upon a somewhat superficial study of the statistics bearing upon the question, that in the South Atlantic and Gulf States the negroes have increased decidedly in proportion to the whites, while in those States which he classes as Border States they have relatively decreased. This massing of the negroes in what may, for convenience, be denominated the cotton States, coupled with the steady sharpening of the line of separation between the two races—a line which, as the author claims, becomes more and more accentuated as the inferior race increases in numbers and advances in education—will lead to inevitable conflict between the two races. As the negro becomes numerically the stronger, and, through education, appreciates more fully his present position, he will commence a struggle for the mastery, and then the days of the Ku Klux will be eclipsed in blood and slaughter. Such is the condition to which these ill-fated States are hurrying. To ward off this impending evil Judge Tourgée urges upon the general government the work of educating the blacks. Such, in brief is the ‘Appeal to Cæsar.’ * * * *

* * * *

“It may, in passing, be suggested that a careful revision of his figures will show many important arithmetical errors, which may modify very sensibly some of his conclusions. It is unnecessary to follow his methods of reasoning, as the truth regarding the questions at issue can be arrived at much more directly. The fact is, that the negro is not migrating southward. There is no massing of the colored people in the cotton States. In 1860 the colored element of these States formed 66 per cent. of the colored element of the country. In 1880 it formed precisely the same proportion. Between 1860 and 1880 the colored element of the country increased 48 per cent. The same element of the cotton States increased, in this interval,

in precisely the same proportion, neither more nor less. These figures are conclusive upon this point, and from them there is no appeal.

“But the fact remains that, in these cotton States, the colored element was in 1880, in comparison with the white element, slightly stronger than it was twenty years before. This, however, is due not to a southward movement of the colored people, but to a decrease in the rate of increase of the whites of those States. While the increase of the native white population in the country at large between 1860 and 1880 was 61 per cent., that part of the same element resident in the cotton States increased but 39 per cent. This low rate of increase among the whites might seem to establish Judge Tourgée’s position, though not in the way he states it, were it not for the fact that three-fourths of this increase took place during the decade between 1870 and 1880. The increase of whites in the South received a most effectual check during the four years of war, in which every male capable of bearing arms was in the field, and in which fully half a million laid down their lives. Since the war the white race has taken up a rate of increase equal to, if not greater than, that of the country at large, a greater rate than that of the colored people within its borders, and there is no apparent reason why they should not maintain it. It is not, then, a migration of the negroes southward which has caused their relative gain in these States, but it is the losses of the white race—losses which, however, are rapidly being repaired.”

It will be interesting now to look to the deductions of the Eleventh Census, and see to what extent it agrees and where it differs from this succinct resumé of Mr. Gannett. I have before me Census Bulletin No. 48, giving the white and the colored population of the South for 1890. As that section of our country denominated the South Atlantic and South Central States with Missouri and Kansas, contained fifteen-sixteenths of the entire colored population of the United States, a race count of these states was made in advance of the main work of tabulation. The total population in this count was found to be 23,875,259, of which 16,868,205 were whites,

6,996,166 were colored, and 10,888 were Chinese, Japanese, and Indians.

The Bulletin goes on to state: "The abnormal increase of the colored population in what is known as the black belt during the decade ending in 1880 led to the popular belief that the negroes were increasing at a much greater rate than the white population. This error was a natural one, and arose from the difficulty of ascertaining how much of the increase shown by the Tenth Census was real and how much was due to the omissions of the Census of 1870. This question has been fully discussed in Bulletin No. 16, and it is now merely necessary to add that the tabulations herewith given sustain the theory already advanced, that the high rate of increase in the growth of the colored population as shown in 1880 was apparent, not real, and was due to imperfect enumeration in the Southern States in 1870.

"Attention is first called to Table I, on the following page, showing the white and the colored population of the states under discussion at each census since 1790, together with the number of colored to each one hundred thousand white and the percentage of increase respectively, of white and colored for the several decades.

"The table summarizes the entire case. In 1890 there were in the States under discussion 6,996,166 colored inhabitants, and in 1880, 6,142,360. The colored element increased during the decade at the rate of 13.90 per cent. The white population of these states in 1890 numbered 16,868,205, and in 1880, 13,530,408. They increased during the decade at the rate of 24.67 per cent. or nearly twice as rapidly as the colored element.

"In 1880 the proportion of white to persons of color in these states was in the relation of 100,000 to 45,397. In 1890 the proportion of the latter class had diminished, being then as 100,000 to 41,475.

YEARS.	POPULATION.		No. of Colored to 100,000 White.	Per Ct. of Increase.	
	White.	Colored.		White.	Colored.
1790 . .	1,271,488	689,884	54,258	. . .	. . .
1800 . .	1,702,980	918,336	53,925	33.94	33.11
1810 . .	2,208,785	1,272,119	57,594	29.70	38.52
1820 . .	2,831,560	1,653,240	58,386	28.20	29.96
1830 . .	3,660,758	2,187,545	59,757	29.28	32.32
1840 . .	4,632,530	2,701,901	58,325	26.55	23.51
1850 . .	6,222,418	3,442,238	55,320	34.32	27.40
1860 . .	8,203,852	4,216,241	51,393	31.84	22.49
1870 . .	9,812,732	4,555,990	46,429	19.61	8.06
1880 . .	13,530,408	6,142,360	45,397	37.89	34.82
1890 . .	16,868,205	6,996,166	41,475	24.67	13.90

"During the past decade the colored race has not held its own against the white in a region where the climate and conditions are, of all those which the country affords, the best suited to its development.

"Referring again to this table, it is seen that in but three decades, that is, from 1800 to 1830, during a part of which time the slave trade was in progress, has the colored race increased more rapidly than the white. Since 1830 the white people have steadily increased at a more rapid rate than the colored. This increase has not been effected by the aid of immigration, for with the exception of Kansas and Missouri, these states have received comparatively few immigrants either from foreign countries or from the Northern States.

"Similarly the proportion of the colored inhabitants to the white increased somewhat between 1800 and 1830, but since that time it has steadily diminished. In 1830, when this proportion was at its maximum, there were nearly 6 colored inhabitants to 10 whites, but this proportion has been reduced to a trifle more than 4 at the present date, or by nearly one-third of its amount."

And again on page 5 :

"The last two tables are of special interest as they illustrate the movements of the colored element during the past half century. An inspection of them makes it evident that there has been no extended northward movement of this element since the time of the civil war. Indeed with the exception of

the District of Columbia, the border states appear to have lost rather than gained, and during the last decade there becomes perceptible a southward movement of the colored element from the border states into those bordering the Gulf, particularly into Mississippi and Arkansas, where they have increased proportionately to the whites. Let the states under consideration be divided into two groups, the first comprising Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, Kentucky, Tennessee, Missouri, and Kansas, and the second, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Texas, and Arkansas. In the first of these groups the increase of the white population from 1880 to 1890 was at the rate of 22 per cent., while that of the colored element was but 5.50 per cent. In the second group the rate of increase of the white was 29.63 per cent., while that of the colored race was but 19.10 per cent. In the first group the number of colored to 100,000 white diminished from 80,116 to 73,608, or only 8.12 per cent. There is, therefore, a perceptible tendency southward of the colored people, which, while by no means powerful, has resulted in drawing a notable proportion of that element from the border states, and in producing in two of the far Southern states a more rapid increase of the colored element than of the white.

“Of the states under discussion, three, namely, South Carolina, Mississippi, and Louisiana, contained in 1890 a larger number of colored people than of white. Of the population of South Carolina more than three-fifths are colored. Five other states, namely, Alabama, Florida, Georgia, North Carolina, and Virginia, contained a colored element ranging from one-third to one-half of the population.”

So much for the Census. This southward movement of the colored from the border states into the gulf states, is what we might naturally expect. The climate and soil are more congenial to the race, but more especially does it show an avoidance of contact and competition with the denser white population of the Northern, Middle, and Western States. The crowds of poor and alien whites which flock to us from Europe, throw themselves into the main streams of popula-

tion fearlessly, and we may say successfully, for with surprising rapidity they become an integral part of our white population. Though many fall by the wayside, many fight their way to the front. The struggle is not so great for them as in the older country. Of the same great race, brain and spine are equally pitted, and they run the same chances with the multitude. This southward migration then of the colored is a most significant fact.

Though I, of course, put a high value upon the census enumeration, I have always regarded the question of relative mortality as the pith of the whole matter. In the census enumeration there are many sources of error, and they have been most evident in several of the censuses. On the contrary, in a study of the relative mortality of the two races living together under similar conditions of soil and climate, the morbid tendencies which produce these racial differences come directly before the observing physician, and they soon become so evident that he who runs may read. I feel quite sure that there is not a competent physician practicing in the south among the two races who will not assure you promptly, that the colored race has not the vitality of the white race, and he will immediately show you in how many ways this has been brought home to him. A southern city, then, with a large population of white and colored, becomes a great "culture" ground where the many factors in the struggle for individual and racial life can be scientifically studied. I therefore purpose to show more plainly the sources of this greater mortality among the colored, and draw more sharply the perspective lines which lead to but one goal, the decadence of the negro as a race. To this end I have studied carefully the mortuary records of my own city, and I shall show that they tally fairly well with the mortality tables of the Tenth Census, prepared under the supervision of Dr. John S. Billings, in volumes XI and XII. The corresponding volumes to come of the Eleventh Census will show even more clearly, I believe, these great racial differences.

Reviewing the general mortality one is struck with the excessive mortality under the first year of life which in a meas-

ure is sustained up to the fifth year, when the vital forces having escaped Scylla at least, have gained sufficient headway to give the individual hope of passing Charybdis and of reaching the allotted term of life. Then reviewing the specified causes of death, we find consumption heads the list, followed by diseases of the nervous system, pneumonia, accidents and injuries, diarrhœal diseases, diseases of digestive system, malarial fever, measles, other diseases of respiratory system, diseases of circulatory system, diphtheria, affections of pregnancy, enteric fever, scrofula and tabes, venereal diseases, cancer and tumors, scarlet fever, diseases of urinary system, bronchitis, and diseases of the female generative organs.

The following table giving the age summary for the last nine years is of interest as showing the high mortality during the first year of life where the colored mortality more than doubles that of the whites. These figures must be viewed in a population of about 25,000 whites and 20,000 colored, or in that proportion. The mortality rapidly falls then for both races, reaching its lowest point between 5 and 10 years, the colored, however, more than doubling the whites. The mortality rises again for both races, reaching its highest point in the decade between 30 and 40, when it falls off again, and in the decade between 50 and 60 the mortality is about the same for both races. There is but little change in the decade between 60 and 70. Between 70 and 80 the colored mortality is greater again, becoming greater still between 80 and 90, and still greater between 90 and 100. This might lead one to think that the colored reach a greater age than the whites. But it must be remembered that the negro's age is usually much over estimated, that few know their right age and they are inclined to add any number of years, so proud do they feel of their senility. And, further, many of these negroes now rapidly passing away, are survivors of the old régime, when they were well cared for, and had reached at emancipation a safe age which kept them out of the struggle of life. They are relicts of better days for them, pure blooded negroes almost entirely, who passed their first fifty years in slavery, and under much better conditions for their physical well being than the new generation can boast of.

AGE SUMMARY TABLE.

YEAR.	1884	1885	1886	1887	1888	1889	1890	1891	1892	Average
Under one year . . .	86 171	63 160	102 235	92 199	58 187	75 176	86 225	90 163	79 217	81+ 192+
Between 1 and 2	34 52	25 57	35 94	28 58	21 49	40 68	32 74	26 57	28 77	30- 65+
Between 2 and 5	36 55	21 45	36 102	30 67	18 46	13 34	27 73	19 40	24 44	25- 57+
Between 5 and 10	22 38	9 16	17 35	16 46	9 25	17 28	12 35	16 24	24 26	15+ 30+
Between 10 and 20	31 40	16 34	15 68	21 44	9 34	11 49	25 44	20 47	20 54	18+ 45-
Between 20 and 30	44 87	37 84	34 101	48 93	39 91	39 92	50 101	41 103	41 99	46 94+
Between 30 and 40	58 77	49 75	47 88	49 86	43 68	48 60	61 81	52 83	54 103	51+ 80+
Between 40 and 50	45 51	24 59	43 64	49 55	51 45	35 65	54 60	54 70	51 69	45+ 60-
Between 50 and 60	37 43	32 25	56 41	54 45	41 44	29 48	52 50	52 47	39 42	43+ 42-
Between 60 and 70	32 33	42 24	44 18	44 17	29 26	29 26	46 27	55 38	39 33	43+ 25+
Between 70 and 80	24 18	24 7	18 34	17 26	26 30	26 33	27 51	38 32	33 25	40 32
Between 80 and 90	5 18	7 22	7 20	9 19	11 19	3 8	9 23	6 23	13 22	7+ 19+
Between 90 and 100	1 12	6 0	7 0	5 0	3 0	4 0	10 0	4 0	10 1	6+ 1
Over 100	0 0	0 0	0 0	0 0	3 3	4 4	0 1	0 0	0 2	1+ 1+
TOTAL	466 703	333 659	452 936	460 796	366 665	384 685	479 870	464 746	468 834	430+ 772+

These figures are not large enough, neither do they extend over a sufficient number of years, to draw entirely conclusive generalizations from, still they are suggestive, and show at least the high infant mortality which has such an important bearing on our subject. It is the mortality of the early years of life

which decides virtually the general mortality, and on the contrary, the reduction of this infant mortality points to a higher vital equation. I give here a table showing the relation of the mortality up to the fifth year to the total mortality for the colored for the last nine years.

YEAR.	1884	1885	1886	1887	1888	1889	1890	1891	1892	Total.
Total mortality, . .	703	659	936	796	665	685	870	746	834	6894
Mortality up to 5th year,	278	262	431	324	282	278	372	260	338	2825

These figures show that about 41 deaths out of 100 occur before the fifth year.* Here is a similar table showing the white mortality :

YEAR.	1884	1885	1886	1887	1888	1889	1890	1891	1892	Total.
Total mortality, . .	466	333	452	460	366	384	479	464	468	3872
Mortality up to 5th year,	156	109	173	150	97	128	145	135	131	1218

* To quote to any extent from the Tenth Census in the relation of age to deaths would swell this paper beyond its proper limits. If the reader can refer to Section IV, p. xxiv, Vol. XI of this Census, he will find some interesting tables, not only comparing the cities with the rural districts, our own states with the countries of Europe, but also the two races in those parts of our country where the colored exist in any number. The two tables on p. xxxii give the proportion of deaths for each age or groups of ages for white and colored, and show the much greater mortality of the colored under one year, and under the fifth year.

"In the southern groups, among the colored population, over half the deaths of males reported, or 507.16 per 1000, under 5 years of age, and for colored females, 438.47 deaths out of every 1000 reported are under 5 years." The greatest mortality among infants under one month occurs in Charleston, where the deaths for white males are 571.4, and for the white females 647.7 of each 1000 deaths under one year.

This shows for the whites during the last nine years that a little over 31 deaths out of 100 occur before the 5th year of life, almost 10 per cent. less than the colored. Of course it must constantly be borne in mind that these figures are for the city, and that the mortality in the country is much less for both races. But it is only from the cities that we get any accurate returns, and more important still, that this is the very point at issue, namely, the mortality of the two races when brought into direct contact and sharp competition. And it is this large source of error in the returns from the country which vitiates the general returns given in the census, and especially so in the returns of deaths among the country colored. Like a bird's-eye view, it shows a large area but no distinct outlines or details.

We have had recently some interesting figures from Japan bearing upon this question. It seems that Japan is a paradise for children; they are well cared for, and the greatest attention is given to their food. In 1872 the population was 33,110,000 and in 1890 it had risen to 40,070,000. Mr. Ourakami attributes this great increase to the low death rate among infants. "It appears that next to France Japan has the lowest birth-rate of any known country, but this is counterbalanced by the conservation of infant life. In fact, in point of infant mortality, Japan at present stands next to England among the nations of the world. Thus while in Russia the death-rate per 1,000 among children under 5 years of age is 423, in Bavaria 405, in Austria 390, in France 341, in Prussia 335, in Japan it is 276, and in England 255."*

Without having any proper birth-returns to show the mortality per 1,000 among colored infants, the figures in the above tables, if joined to the large number of still-births and premature births, show an exceptionally high mortality, higher than any figures given above. On this point I have no doubt. This is without question the pivotal point in the matter, and I shall go into some details to bring into relief its main features. I shall indicate the causes of ante-natal

*The Medical Record, March 18, 1893. p. 352.

mortality, of the death of the child at birth and during the lying-in-period, and finally of the dangers besetting it during its first years of life.

Despite the prolificness of the negress, the child *in utero* has many chances against its coming to term. The temptations and irregularities of illegitimacy swell the list of premature and still-births, and the number reported is but a poor showing of the real number of cases. They are looked to by "grannies" and ignorant midwives. The fœtus before the viable age is gotten rid of and finds no record at the Health Office, while the viable child usually dies from neglect and carelessness, if not from criminal measures. The mother practically receives no treatment, and she is soon up and about, with her uterus and adnexa in a diseased state.

Although I have no figures to bear me out, I am persuaded that the prolificness is lowered, and that the liability to miscarriage is increased, by miscegenation. This has certainly been my experience, and is in accord with the generally lowered vitality resulting therefrom.

It is of course well known that the poisons of syphilis and gonorrhœa both favor a throwing off of the product of conception. In the colored this is seen with redoubled force, due to the fact that both these diseases are apt to be virulent with them, and also that they do not realise their dangers or take the trouble to be properly treated. Again the very early age at which they become infected adds to the dangers from this source. The high types of fever, vaguely styled bilious, gastric, malarial remittent, and conjestive, to which the colored are by their occupation more exposed, and to which they have become more and more susceptible, frequently result in miscarriages. I have seen it follow tuberculosis pulmonum, general tuberculosis, pneumonia, and measles, to all of which diseases the colored are liable, and which prove very fatal to them. The usual causes which operate with the whites operate with them, and, as all the returns show, with even greater effect. The following table I have made up from the mortuary reports of the last nine years :

YEAR.		1884	1885	1886	1887	1888	1889	1890	1891	1892	Total.
Still-births, . .	W } 25	29	19	24	33	25	34	42	21	252	
	C } 78	133	144	101	97	122	116	116	133	1040	
Premature do	W } 14	10	7	20	19	20	21	24	32	167	
	C } 14	11	5	16	33	34	25	19	20	177	

It will be seen here that the still-births are more than three times as numerous among the colored as among the whites, but that there is virtually no difference in the returns of premature births. It must be remembered that with premature births they can more easily evade the law, and that they will avoid reporting their cases whenever they can. It is only necessity which compels many to get a burial permit. Naturally, therefore, these figures must be far from the truth.

According to the Tenth Census, vol. XII, p. LXXV, "The proportion of deaths reported as due to infanticide is highest among the colored population, being 14 out of each 100,000 deaths from specified causes, while for the whites in the same regions it is 5, and in the large cities 3, and in the rural districts 5 per 100,000." The poor returns from the rural districts account for the last figure which, of course, is incorrect. And again: "It will be seen from table 75 that the proportion of infants reported as still-born is much greater in the cities than in the country, decidedly greater among those of German than among those of Irish parentage, and somewhat greater among the colored race than among the whites. A certain number of cases reported as still-born are really cases of infanticide."

From the nature of the case the returns must be especially imperfect; the mortality from child-birth naturally calls for mention here. By far the largest portion of the colored employ midwives, only calling in a physician when there is dystocia, and even then they wait till the eleventh hour, endangering the life of both mother and child. These midwives are usually dirty, ignorant, and meddling, often changing a natural presentation into an unnatural one, im-

perilling both mother and child. It is not uncommon to find a midwife vigorously rubbing the abdomen of the poor puerpera, in view of helping the pains, and producing a more or less complete version of the child. The woman is delivered in a small room, all air and light shut out, and the atmosphere reeking with the emanations of the anility of the neighborhood, who have come in to view an event which has always the charm of a novelty. To these cases the physician is frequently called to meet all possible forms of dystocia, dangerous to both mother and child. Puerperal convulsions are more common among them than among the whites, and the mortuary tables show twice the mortality among the colored. I have myself attended twenty-two cases of this disease, 8 whites and 14 colored, with two deaths among the whites and six deaths among the colored. Of the children, four died among the white and nine among the colored. In many cases I was only called in after much precious time had been lost.* My case book will show all possible presentations and complications. I may mention placenta prævia, ruptured uterus, large uterine fibroids to which the negress is especially liable, puerperal septicaemia and peritonitis, neglected retained placenta and all its dangers. And I may mention lacerations of the cervix and perineum, and vesico-vaginal fistula. I mention these because there is a common belief among those who do not know, that the negress is like her African sister, who, living in a savage state, is free from these complications of the modern civilized woman. She is not only liable to them, but from neglect and improper treatment suffers more than the white. This must affect her prolificness with even greater force in the future. In going over the reports in the last nine years, I find the figures too meagre and the diagnoses often vague, so that it has but little value to us, except as showing that the mortality among the colored exceeds that of the whites, about in the proportion of 2 to 3.

* See my paper in the *Medical Record* for Oct. 24, 1891.

YEAR.	1884	1885	1886	1887	1888	1889	1890	1891	1892	Total.
Child birth	0	1	5	3	2	0	0	1	2	5
} W	0	1	5	3	2	0	0	1	2	21
} C	1	1	2	1	3	0	0	1	3	12
Puerperal convulsions	4	1	2	2	2	4	3	0	2	17
} W	4	1	2	2	2	2	1	2	2	11
} C	1	1	0	0	2	0	6	0	2	17
Puerperal fever	4	3	0	0	0	0	0	0	0	0
} W	4	3	0	0	0	0	0	0	0	0
} C	0	0	0	0	0	0	0	0	0	0
Puerperal metritis	2	0	0	0	0	1	0	0	0	3
} W	2	0	0	0	0	1	0	0	0	3
} C	0	0	0	0	0	0	0	0	0	0
Puerperal peritonitis	0	1	1	1	0	0	2	2	0	7
} W	0	1	1	1	0	0	2	2	1	7
} C	0	0	0	0	0	0	0	0	0	0
Puerperal phlebitis	0	1	0	0	0	0	0	0	0	1
} W	0	1	0	0	0	0	0	0	0	1
} C	0	0	0	0	0	0	0	0	0	0
Puerpera	0	1	0	0	0	0	0	0	0	1
} W	0	1	0	0	0	0	0	0	0	1
} C	0	0	0	0	0	0	0	0	0	0
Puerperal thrombus	0	0	0	0	0	0	0	0	0	0
} W	0	0	0	0	0	0	0	0	0	0
} C	0	0	1	0	0	0	0	0	0	1
Placenta prævia	0	0	0	1	0	0	0	0	0	1
} W	0	0	0	1	0	0	0	0	0	1
} C	0	0	0	0	0	0	0	0	0	0
Metrorrhagia	0	0	0	0	1	0	0	0	0	1
} W	0	0	0	0	1	0	0	0	0	1
} C	0	0	0	0	0	0	0	0	0	0
Puerperal septicaemia	0	0	0	0	1	2	0	1	0	4
} W	0	0	0	0	1	2	0	1	0	4
} C	0	0	0	0	0	0	0	0	0	0
Miscarriage	0	0	0	0	0	1	1	0	0	3
} W	0	0	0	0	0	1	1	0	0	3
} C	0	0	0	0	0	0	0	0	0	0
Abortion	0	0	0	0	0	1	1	1	1	4
} W	0	0	0	0	0	1	1	1	1	4
} C	0	0	0	0	0	0	0	0	0	0

Referring to the Tenth Census I find the following statement in regard to deaths from child-birth: "The following table shows by grand groups the proportion of deaths from child-birth and from abortion per 1000 deaths from known causes, with distinction of rural and cities, and for certain

grand groups, for white and colored, and of Irish and German parentage. It will be seen from this table that the mortality in child-birth is about twice as great in relation to the deaths from known causes in the colored female as it is in the white, and that it is markedly greater in those of German than it is in those of Irish parentage. The same rule holds good as regards abortion although the difference is less marked. A large proportion of deaths due to criminal abortion are reported as deaths from peritonitis, which is the cause in part of the excess of deaths in females reported as due to that disease.*'

The colored infant comes into the world under very adverse circumstances, and the many dangers besetting it before its fifth year make one wonder it ever reaches maturity.

One of its first dangers is trismus nascentium. The following

YEAR.	1884	1885	1886	1887	1888	1889	1890	1891	1892	Total.	
Trismus Nascentium	W	11	4	4	3	5	1	3	3	2	36
	C	28	40	39	34	27	14	17	11	22	232

figures make the colored mortality from this disease more than six times that of the white. Modern research has shown the cause of tetanus to be a bacillus common in garden mould. Here is a case of marked racial susceptibility. The filthy way in which the infant is dressed renders it still more liable. I have never seen a case recover; and here in our city alone 232 colored infants have died from this disease in the last nine years!

I give here for comparison the cases of tetanus in the adult for white and colored for the last nine years.

YEAR.	1884	1885	1886	1887	1888	1889	1890	1891	1892	Total.	
Tetanus	W	0	2	2	1	4	2	0	4	2	17
	C	3	4	4	4	2	3	1	2	3	26

* Vol. XII, p. lxxi.

Though the colored mortality exceeds that of the whites, the disparity is much less than in the case of trismus nascentium.

According to the Tenth Census the proportion of deaths from tetanus and trismus nascentium are for the whites 33.5 and for the colored 39.3 per 1000 deaths from known causes. I cannot think that these figures are reliable. The much greater susceptibility of the negro is generally recognized.

Gastro-intestinal diseases, with their accompanying disordered digestion and malnutrition, carry off the largest proportion of white infants and young children. With all nations it is among the poor and overcrowded that we see the highest mortality, where ignorance and poverty swell so greatly the death list. These factors, of course, exist among the colored to a large extent, though I do not think they ever have to endure anything like the lethal influences of the tenement life of our great cities. Living in warmer climates they escape the sufferings of intense cold poorly provided for, and their homes which consist of one-story frame houses or huts, are infinitely better, with all the dirt, than the small rooms and high stories of the city tenements. If the colored had to live under such conditions the infant mortality would greatly exceed that of the tenement poor of the great cities as well as their own present death rate. Fresh air and proper, clean food, would probably reduce this death rate one half. This important factor of proper food never enters the head of the ordinary colored mother. Even when liberally provided with nature's food, the breast is soon discarded for dirty feeding bottles and all sorts of abominations. You will frequently see a colored child, the canines not yet through the gums, sitting up at the table taking its regular dinner with the older members of the family, a dinner consisting of rice, greens, bacon and pot-liquor, and perhaps other abominations besides. This child may stand this better than the white child, but for all that it pays dearly for its smartness.

As a result of this we find gastro-intestinal catarrhs in all their forms, with reflex congestions of brain and other organs. The data from the mortuary tables are unsatisfactory so far as

knowing the exact state of affairs, because the diagnoses sent in are from different standpoints, and symptoms put down instead of diseases or pathological states. For example, many cases are put down as "convulsions" or "teething" which give us no record of the real pathological condition present. Again, many appear as *cholera infantum*, which covers a multitude of sins. My own experience has been that real *cholera infantum* is rare among us, comparatively speaking.

To try and clear up somewhat this unsatisfactory nomenclature, I have picked out of the mortuary tables the diseases common during infancy and childhood and have arranged them in three main groups.

I have in this table only put down those diagnoses which are recognized as children's diseases, and which are of sufficient importance to be considered as factors in the death-rate. Where there is doubt of the case being infant or adult, or, for example, under enteritis, which, moreover, only includes a few cases, I have omitted them. This table will give us a fair idea of the relative mortality of the two races. They can be divided into three groups. "Congestion of the brain," "convulsions," "meningitis," and probably the most of "dentition," and "worms," are but different expressions for closely allied pathological states of the brain and nerve centres. Again, "cholera infantum," "entero-colitis," "thrash," "inanition," "intestinal catarrh," and "marasmus," are all related to the gastro-intestinal tract. And there is a third group comprised under diphtheria, whooping-cough, membranous croup, measles, and scarlatina, diseases recognized as having a specific germ origin.

YEAR.	1884	1885	1886	1887	1888	1889	1890	1891	1892	Total.
Congestion of the brain	20	8	10	19	13	14	14	16	17	131
C	16	9	15	21	11	10	20	8	11	121
W	4	12	11	17	6	13	5	12	6	94
Convulsions	52	39	40	32	34	24	38	36	31	326
C	3	3	3	0	3	4	0	1	1	18
W	20	17	23	9	20	17	20	15	17	158
Deutition	8	6	13	6	5	4	4	13	16	75
C	14	3	9	2	3	4	4	5	6	59
W	0	0	1	0	0	0	0	0	0	1
Meningitis	4	2	4	0	0	2	4	0	0	16
C	19	11	0	19	8	13	17	12	12	111
W	18	16	0	18	17	16	20	14	14	133
Cholera infantum	6	3	5	1	1	21	9	9	11	66
C	4	1	11	1	3	10	21	12	15	78
W	0	0	0	1	0	0	0	0	0	1
Thrash	0	0	0	1	0	0	0	0	0	1
C	0	0	0	3	1	1	0	5	3	13
W	8	4	12	11	0	4	0	0	1	40
Inanition	17	14	30	37	0	17	0	0	0	115
C	0	0	1	3	0	0	0	0	0	4
W	0	0	6	11	0	0	0	0	0	17
Intestinal catarrh	13	12	25	16	19	15	24	20	12	156
C	30	14	29	31	34	18	43	33	17	249
W	23	14	3	4	5	4	0	12	18	83
Marasmus	4	1	3	3	1	2	0	0	1	15
C	0	1	2	0	3	0	13	6	2	27
W	0	7	13	2	6	0	16	6	3	51
Hooping cough	4	1	3	2	2	0	0	0	3	14
C	4	1	1	1	1	0	0	1	3	19
W	0	0	8	3	2	1	4	2	0	20
Croup membranous	0	0	28	5	1	5	1	0	0	40
C	0	0	1	0	0	0	0	0	13	16
W	0	0	4	0	0	0	0	0	3	7
Measles	0	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0	0
W	0	0	0	0	0	0	0	0	0	0
Scarlatina	0	0	0	0	0	0	0	0	0	0

Examining this table a little more closely, we find under "convulsions," a great disparity between the two races, at least three to one in favor of the whites. But when we turn to "meningitis" and "congestion of the brain," we find

larger figures for the whites in both cases. This shows, I think, that "convulsions," "meningitis," and "cerebral congestion," represent nearly the same thing, and taken together we have 497 deaths among the colored against 300 among the whites. So under "worms," death probably came through reflex cerebral trouble, or wasn't "worms" at all. The diagnosis, of course, has no weight and we can merely conjecture the cause of death. Put together we get a mortality about double that of the whites, the figures standing 844 for the whites against 1405 for the colored.

In the second group we find a great disparity between the races under "inanition" and "marasmus," while under "cholera infantum" and "entero-colitis" the figures almost correspond. Here, too, careless diagnoses have been made, and with no proper understanding as to nomenclature. As I have already said, cholera infantum is not a common disease here, but is mistaken for intestinal catarrh and entero-colitis, two diseases which are common here and which carry off great numbers of colored children. Putting this group together, we find a mortality among the colored fully double that among the whites.

Diseases of the nervous system stand second, and diseases of the digestive system fifth and sixth in the order of frequency as causes of death in the general mortality, and we can see their influence here in the infant mortality. It is, however, especially in this latter group that the colored so far exceed the whites. To the practicing physician it is the first great factor which is brought home to him in a comparison of the vitality of the two races.

In the third group we have diphtheria, membranous croup, scarlatina, measles, and whooping-cough. Diphtheria and membranous croup are now generally regarded as one and the same disease, and both are more common in whites than in colored, one of the few instances where the colored can boast of less susceptibility. And scarlatina which is so often accompanied with diphtheria, is also less common among the colored. But measles and whooping-cough are both very much more fatal among them. Of measles the Census gives

the proportion of 9.1 among the whites to 17.7 among the colored per 1,000 deaths from known causes, and our table tallies well with these figures. Cases of whooping-cough become broncho-pneumonia with brain complication and convulsions.

As the mortuary tables do not give the proportion of infants and young children, I have had to limit myself in the above table to recognized infantile diseases, but from my own experience I can state positively that bronchitis, broncho-pneumonia, and pneumonia are common among the colored children and very fatal. Broncho-pneumonia is the form most commonly met with, and many cases put down as pneumonia are, strictly speaking, this form of the disease.

The great heat of the summer, especially the *vitiating* heat in the large cities, is a most potent factor in raising the death rate among the infant population. This factor holds with much less force in the southern cities from the fact that houses are built more open, of one or two stories only,—I speak of the homes of the poorer classes,—and the summers, while much longer than the northern summers, have not that intense heat, and most important still, the air is not so vitiated as it is in districts where high brick walls prevent a proper ventilation. Yet I see many cases of high fever among colored infants and young children, with symptoms of cerebral congestion and inflammation, and with a high mortality, due to a direct exposure to the sun's rays. This is a danger which is absolutely unheeded by the colored masses. It is a frequent cause of death. The whites are more careful in this respect and suffer less. What is known as sunstroke, *ictus solis*, due to a hot *vitiating* air, is not so common in the south as in the close cities of the north and west.

As I shall show later, tuberculosis in the form of pulmonary phthisis, carries off almost twice as many colored as whites. This affects chiefly the adult population. With our increasing knowledge of tuberculosis, we find its path of destruction becoming broader and broader. At the time of Koch's discovery of the tubercle *bacillus*, its field of operation seemed to be limited to the lungs. It was soon found, however, that

scrofulous glands, hip-joint disease, Pott's disease, and chronic bone and joint affections, were also caused by the same germ.

The bacillus attacks the human body at all points, and while the respiratory tract seems to bear the brunt of attack, it is found that the percentage of infection here is by no means so greatly superior to that of other organs or mucous channels. In 1,000 autopsies, cited by Osler, there were 275 cases with tubercular lesions, or over one-fourth. In the surgical clinic at Wurzburg, among 8,873 patients, 1,287, or about one-seventh were tuberculous, the bones and joints being involved in 1,037 cases. The post-mortem statistics of Harris and others show that over one-third—perhaps over one-half—of the people who live to middle age have some form of tuberculous infection.*

With these figures, and knowing how even with white children the large majority of cases of meningitis are tubercular, and how frequent it is in gastro-enteric lesions, how much greater effect must the bacillus have in the more susceptible colored child. Careful autopsies in the many cases of meningitis, gastro-intestinal catarrhs, in "marasmus," "inanition," "convulsions," and "dentition," would undoubtedly reveal this malignant germ. We may almost define the term "vital equation" to be the sum total of those forces which resist the bacillus tuberculosis.

From what I have here given, hardly more than in outline, the great influence of this high rate of infant mortality must be very apparent. And it cannot be explained solely by the fact that the colored population represents almost entirely the poor and ignorant class, with all the evil influences of poverty, ignorance, dissipation, and general unhealthy living,—for it must be remembered that there is a fair contingent of whites in equal poverty, hunger and dirt,—but that the negro is more susceptible, has less powers of endurance, and succumbs more readily to the same diseases. Verily, the mills of God grind fast! Even the high prolificness of the race *under favorable conditions* could not keep pace with this mortality. On the contrary, a lower birth rate as naturally follows a lesser vitality

* The Medical Record, March 18, '93, p. 337.

as a higher death rate. Man has no such compensatory prolificness to meet a higher death rate as exists perhaps in some lower forms of life.

Consumption heads the list of the causes of death. Its importance becomes apparent when it is recognized that about one-sixth of all deaths are due to this disease. Of its greater fatality among the negroes there can be no question, and in our southern cities where the two elements come together in large numbers, the mortality among the colored about doubles that of the whites.

The following table shows the mortality in our city from 1884 to 1892 inclusive :

YEAR.	1884	1885	1886	1887	1888	1889	1890	1891	1892	Total.
Tuberculosis pulm.	53	52	49	56	59	42	75	63	45	494
W	98	102	107	109	103	99	125	128	114	985
C										

I have not thought it necessary to estimate the deaths per 1000 of population, for the exact population is an uncertain element, and all figures must be only an approximation at the best. It will be amply sufficient for our purpose if these figures are viewed in a population where the whites are somewhat in excess.

A careful examination of the various board of health reports of our different southern cities and states will all show a remarkable uniformity on this point. To give anything like a full report on this subject from our different cities would swell this paper far beyond its proper limits, and I shall merely state that having examined the reports from Charleston, Richmond, New Orleans, Memphis, Nashville, Chattanooga, Knoxville, Columbus, Atlanta, and Mobile, I find that they tally well with our own tables.

The Tenth Census states :

“The total number of deaths reported as due to consumption during the census year was 91,270, being the greatest

number reported as due to any single cause of death." (Vol. XII, p. lviii.)

And further :

"It will be seen that the great majority of the deaths from consumption occur between the ages of 15 and 65, the greatest proportion in any decennium occurring between the ages of 20 and 30. The proportion of deaths between the ages of 15 and 35 is greater in the female than in the male. If we take the group of ages from 15 to 65 and compare the number of deaths reported as due to consumption with the total number of deaths from specified causes at the same group of ages, we find that the proportion is greatest in large cities, being, per 1,000,000 deaths, for males, 307,154, and for females, 338,571, while in the rural districts it is, for males, 218,455, and for females, 298,583. At the same group of ages in those regions where distinction of color and percentage are made, the proportions are, for whites, in each 1,000,000 deaths, males, 242,842, females, 302,046; for colored, males, 248,179, females, 326,973; for those of Irish parentage, males, 309,507, females, 375,636, and for those of German parentage, males, 249,498, females, 254,958. From these figures it would seem that the proportion of deaths from this cause in the colored race is but slightly greater than in the whites, and that it is greatest of all in the Irish. At ages under 15 a great excess of deaths from this cause is reported in the colored race." (Vol. XII, p. lix.)

These figures, I am sure, are very unreliable. The census admits the imperfect returns from the colored, and a review of Table III, p. xxi, Vol. XI, will show that the only returns from registration cities, which give a comparative mortality for the two races, are Louisville, Washington, Richmond, Baltimore, New Orleans, and Charleston, very inadequate returns to attempt anything like an accurate, comprehensive survey.

Turn to the diagram on p. xxxvii, showing for whites, colored, and Indians, the proportion of deaths from specified diseases in 1,000 deaths from known causes, and it will be found that the Indian mortality from consumption is almost

one-third greater than that of the colored, which, with our present light on the subject, must be a great error. It simply shows that the Indian returns have been more complete. And the same applies to the excessive mortality among the Irish. The cities drawn from have had this element of their population especially large. All this but convinces me the more that we can draw more accurate conclusions from a small section with complete returns than a superficial survey of a large territory with incomplete returns.

To the physician treating the disease among the colored, its great fatality is but too apparent. I can hardly recall a case where I have stayed it, and they die without the slightest response to treatment, and in a very short time. I have on many occasions been able to trace its contagiousness, several members of the same family going down in succession, the same room and the same bed serving for all. No one can doubt its contagiousness from such experiences. Soon after Koch brought out his lymph, I tried it very prudently with a mulatto but with such terrible aggravation that I never dared attempt it again.

So far as my experience goes, I have failed to find among the colored, many cases of local tubercular trouble, outside the lungs, brain, or elementary tract, and I explain it by this very great susceptibility. Local tubercular processes of skin, bone, or mucous membrane, of any duration, presuppose a certain amount of resistive power on the part of the body, preventing its becoming pulmonary or general. It is kept local. I do not believe the negro can long have a tuberculous focus in any part of the body without its rapidly becoming pulmonary or general. Further, my experience teaches me that the mulatto is more susceptible than the pure negro. It is with them that I have mostly seen those galloping cases which defy all efforts to restrain.

I have never seen a case of lupus in the negro, of tuberculous lesions of the bones I have seen but few cases. I can recall but few cases of tubercular peritonitis upon the diagnosis of which I felt any confidence. Tuberculosis of the genito-urinary organs I believe is more common, as following in the wake of gonorrhœal infections.

I have been assured by physicians who practiced among them before the war, and when their physical condition was so much better than it now is, that consumption was almost unknown. The finding of any tubercular lesion in the lungs at an autopsy was always a surprise. I shall, however, speak of this later.

I have mentioned in my first paper the great susceptibility of monkeys to tuberculosis when brought to this country. The change of habitat and surroundings induce this predisposition. Perhaps we had better say that greater exposure to the germ coupled with impaired health from unnatural living brings about this mortality.

Pneumonia stands third in the list of causes of death. It is rare that I save a case of pneumonia either in adult or child among the colored, and an inspection of the mortuary records brings out a great disparity between the two races. Here is a table of the deaths from pneumonia since 1884.

YEAR.		1884	1885	1886	1887	1888	1889	1890	1891	1892	Total.
Pneumonia . . .	W	17	9	16	15	22	18	7	23	20	147
	C	33	37	74	41	48	46	47	52	52	430

Here in nine years we have had 147 cases of pneumonia among the whites and 430 among the colored, in other words one white dies to three colored. The Census states, "The comparative excess of mortality from pneumonia in the colored race in the South has been known for a long time." The disease with them rapidly assumes a general infection; there is a high temperature, typhoid symptoms, singultus, unconsciousness, and death. Cases which recover are apt to succumb later to tuberculosis.

Here are the figures put down to bronchitis and capillary bronchitis:

YEAR.		1884	1885	1886	1887	1888	1889	1890	1891	1892	Total.
Bronchitis	W	5	3	2	3	3	1	5	7	4	33
	C	10	6	15	4	12	11	17	13	20	108
Capillary Bronchitis	W	0	4	2	3	2	2	2	2	3	20
	C	0	5	7	2	1	2	4	5	9	35

Bronchitis is not common with us, and the doubt in the diagnosis is to be considered. The Tenth Census states it causes a greater proportion of deaths in the white (17.3) than in the colored (12.8). It is, however, a small factor in the general mortality here in the South.

I give here a strange pathological table which shows the difficulty we sometimes labor under from improper diagnosis, or rather no diagnosis at all. There is an immense return, for example, under "anasarca" which is simply a symptom, and may result from heart, liver, or kidney trouble, and even other troubles. Again, "ascites" is usually a symptom of hepatic cirrhosis, but may occur from other abdominal conditions as well as heart and kidney troubles. "Cardiac dropsy" gives us no idea of the real condition present. To offset this I have added the cases of Bright's disease, hepatic cirrhosis, and heart disease, including under the latter term all specified diagnoses of heart trouble. Although the figures here reduce somewhat the great disparity from "anasarca," "ascites," and "cardiac dropsy," it is very evident that the colored are still largely in excess of the whites in cardiac and renal diseases.

According to this table hepatic cirrhosis is more frequent among the whites, yet if we combine the figures with those of ascites, the colored are in excess. Again it is the heart troubles which add mostly to the mortality, and while even here the negro mortality exceeds that of the whites, still it is in Bright's disease that we find the greatest disparity, and greater still if we include a certain proportion of the cases

under "anasarca," which we are justified in doing, I think. Whichever way we turn the pathological horizon remains the same, the colored looming up ever on the darker side of the picture.

YEAR.	1884	1885	1886	1887	1888	1889	1890	1891	1892	Total.
Anasarca W	7	3	11	7	1	2	2	1	1	35
C	30	28	28	36	15	12	17	21	20	207
Ascites W						1	0	0	0	1
C				2		2	16	6	7	33
Cardiac dropsy . . . W	0	2						0	0	2
C	2	0		3				2	1	8
Bright's disease . . W	5	5	5	5	4	10	13	6	12	65
C	4	6	9	7	15	8	8	23	13	93
Hepatic cirrhosis . W	3	0		3	4	5	4	2	0	21
C	0	2		1	1	0	1	1	0	6
Heart disease . . . W	24	14	25	25	20	2	23	19	32	184
C	14	28	22	27	17	14	29	15	18	184

The Tenth Census states : " These figures confirm the statement just made that much of what thirty years ago was reported as dropsy is now reported as heart disease ; and for this reason, as well as to permit of a comparison presently to be referred to, heart disease and dropsy are grouped together in the present study. They caused a greater proportion of deaths in the rural districts (59.7) than in the large cities (46.4), and a greater proportion in the colored (64.5) than in the white (56.1)"

In the Tenth Census Bright's disease is not considered separately but comes under " Diseases of the Urinary System and of the Male Organs of Generation" where the mortality appears less for the colored. (White, 19.2, colored, 9.6). I find no records in the Census of hepatic cirrhosis.

I give here a table showing the total deaths for white and colored under "Undefined" and "Death without Physician."

YEAR.		1884	1885	1886	1887	1888	1889	1890	1891	1892	Total.
Undefined . .	W }	5	9	13	7	5	6	17	19	14	95
	C }	37	70	82	94	81	133	139	100	143	879
Death without physician . .	W }	13	7	14	15	7	10	20	23	9	118
	C }	119	114	240	250	182	220	301	215	208	1849

This is another gloomy side to the picture. In the present state of the world there is no denying the fact that the poor cannot command the attention which the rich and the well-to-do can. However willing the physician may be to care for the sick poor the unsatisfactory conditions and surroundings in which they live, conditions which he is not able himself either by advice or more tangible means to remedy, must detract from his interest in the case. Called to a patient in poverty and dirt he feels that before his services can avail, before he makes his diagnosis, prescribes, and gives his directions, the patient needs a clean bed and a warm room, pure air and suitable nourishment and attention, and directions properly carried out. These all failing he feels utterly helpless to treat the case. He can but make his diagnosis and prescribe, and go away.

Furthermore, there is apt to be among the masses of the colored an indifference, real or apparent only, on the part of the patient and family which must add to the physician's indifference and must be a damper to help from outside. You see it in the patient and you see it in the family, and even in the mother for her child. You are called to a sick negro and he will hardly turn over in bed to face you and answer you, and seems quite indifferent whether he answers your questions or not, and you may go away without knowing the real cause of your being sent for. This happens so often that you soon come to look upon it as a racial characteristic. This explains how often you meet neglected cases, cases of ugly wounds and ulcers, whose very loathsomeness and discomfort, not to say real pain, you imagine would compel them to seek advice and treatment. You see this in ven-

ereal troubles which are allowed to go on until irreparable damage has been done. For the same reason you rarely get a malignant growth in its beginning; it is only when it has gone so far that radical treatment is out of the question that they finally see the physician. A carcinoma of the breast is left until the axilla becomes involved and the violent pain finally compels the patient to seek aid. A phagedenic sore is allowed to reach a great size before it occurs to the poor patient that it had better be looked after. This explains how often the physician is sent for when the patient is moribund, how often a death-certificate is demanded of the Health Officer for cases which have never been seen by a physician. And here are the figures to speak for themselves, 95 whites with a certificate of "undefined" against 879 colored with the same blank certificate; and 118 whites dying without medical attention against 1,849 colored unattended, and in the last nine years, and in a population not exceeding 50,000, and with the whites between 5,000 and 10,000 in excess. And this indifference is largely due to an insensibility to pain as well as a lack of pride in physical well-being, pride in the possession of a complete body with all its faculties operative, a quality possessed by the higher order of man. This insensibility is seen in minor surgical operations, in the parturient woman, and in the neglected wounds and lesions, and the many little ills which the more sensitive would seek relief from. The loss of an eye or a member carries with it but little concern. And all this is but that fatalism which has come to them from the past.

In considering the high infant mortality I spoke of syphilis in its effects upon premature and still-births, and I shall now speak of the effects of the two venereal diseases upon the adult population. We shall never get any figures which can even approximately show us the real influence deathward of these troubles. That they are all-potent in the white race must be admitted, and their ravages among the colored become very real to the physician practicing among them. The figures which I have been able to obtain from our mortuary tables are too small to have any value. I give them, however, for what they are worth.

YEAR.		1884	1885	1886	1887	1888	1889	1890	1891	1892	Total.
Syphilis	W	2	1	0	0	0	1	1	1	0	6
	C	4	11	6	12	8	1	6	6	9	63
Urethral stricture	W	0	1	0	1	0	0	1	0	0	3
	C	0	0	1	0	0	1	0	1	0	3

It is the physician only who can trace the pathological lines leading to ill health and death whose course has been set, directly or indirectly, by these two diseases. They lie so much beneath the surface, cropping out in so many unforeseen ways, and at so many unexpected points, that the scientist is often at a loss how to draw his pathological relief-chart. There are so many deep lesions of nerve-centres, viscera, and blood vessels, which are the outcome of syphilis, contracted, perhaps years before, that the disease has a most potent influence in reducing the vital equation. And especially is this the case when there is a history of neglect and intemperance, factors which enter so largely into the disease among the colored. As a consequence we see all these stages in virulent form; mixed and phagedenic sores primarily, followed by severe secondaries, tubercular and pustular syphilides, violent throat symptoms, iritis, and keratitis. Its tendency among the women to produce abortion I have already mentioned. I have not seen anything to compare with it among the whites. And we see here not only the prospective loss of life but all the dangers to the woman of the miscarriage itself.

The congenital form is so virulent that most of the infants do not reach term. And with all these flagrant examples of its lethality, there is probably as large a class dying of other diseases where the vitality and the resistive power have been so undermined by syphilis that they have succumbed to a strain which they could otherwise have borne.

The large majority of the cases of pyelo-nephritis and cystitis can be traced to the infection from gonorrhoea, and with

women the serious complications of salpingitis and pelvic peritonitis are traceable to the same cause. Both these factors must influence the colored, for this disease is always serious with them, both from predisposition and the most flagrant carelessness. I have never among the whites seen such neglected cases of old strictures where urethral abscesses and fistulæ have formed, and where they have been content to go along without interference until, perhaps, extravasation of urine has compelled them at the eleventh hour to seek surgical help. One of these cases I have just operated upon and with fatal result, and hardly a month has passed since I was called to a negro whom I found lying upon a dirty floor dying from an extravasation of urine which had taken place several days before, and for whom nothing had been done or any surgical aid sought, although probably twenty negroes in the settlement knew of his condition. I mention this as showing that apathy, that indifference to make a struggle for life, which is such a strong racial trait.

Of the returns from venereal diseases the tenth census states: "In those parts of the country where the distinctions are made between white and colored, and Irish and German parentage, the proportions are, colored, 3.0, whites, 1.7, Irish, 1.4, and German, 1.3 per 1000 deaths from known causes." The returns from alcoholism and venereal diseases are always very imperfect, and I give these figures for what they are worth.

The negro once could boast of his unsusceptibility to malaria and live secure in regions fatal to the white man. But this exemption has been growing less and less complete, and to-day the colored mortality from malarial and miasmatic diseases is very much greater than it once was. The reasons for this are various. In the first place a large part of this mortality is from the mixed element which is more susceptible than the pure negro by virtue of the white admixture. This is self-evident. In the second place, a less resistive power naturally follows a less healthy physique. In the third place, in the so-called malarial and miasmatic diseases an

enteric factor is apt at times to be an important element, an element to which the colored are very susceptible, and which is very fatal to them. This has been plainly shown by statistics collected during the war among the colored troops.

The etiology of our prevalent fevers included under the terms malarial and miasmatic is largely a jumble of mere theories and opinions. There are certain ones which seem to be purely malarial, as we understand the term; others seem to be larval forms, masked by other elements vaguely called climatic; and others where a distinct enteric or typhoid character is shown. We call them typho-malarial, a convenient term, but one which prompts to laziness in our efforts to differentiate more closely. All these fevers from the simple continued fever up to the severer forms of the malarial remittent, of the bilious and hemorrhagic types, are constantly met with among the colored. My experience has been that the simple continued fevers, without any complications, run a protracted course and are hard to break, while the severer malarial remittents and the typho-malarial are very fatal. Granted that the pure negro bears, comparatively speaking, a charmed life in rice fields and uncultivated districts very fatal to the white man, his much greater exposure swells his death list, and this is the important point. Typhoid fever proper is a rare disease with us, comparatively speaking, and when it occurs generally assumes a larval form, masked and modified in one way or another by our climatic influences. To these fevers the negro rapidly succumbs.

This year we have had more typhoid fever and remittent fevers of various types than has ever been known in Savannah, and a reference to our mortuary tables will show that, taking all forms of fever into consideration, the colored mortality is greater.

YEAR.	1884	1885	1886	1887	1888	1889	1890	1891	1892	Total.
Bilious malarial . . W	.	.	.	1	1	0	.	1	.	3
Bilious malarial . . C	.	.	.	4	1	1	.	0	.	6
Congestive malarial W	15	10	16	9	6	11	16	10	6	94
Congestive malarial C	4	2	12	3	3	4	7	7	8	50
Typho-malarial . . W	1	5	4	9	3	1	12	11	5	51
Typho-malarial . . C	3	7	9	10	2	9	15	10	24	89
Remittent malarial W	12	5	16	8	5	10	1	1	12	70
Remittent malarial C	18	3	41	13	12	14	14	0	19	134
Typhoid fever . . W	8	4	11	10	8	4	17	5	21	88
Typhoid fever . . C	11	4	11	0	4	6	9	12	11	68
Intermittent malar. W	2	0	.	.	2	2	1	3	.	10
Intermittent malar. C	5	1	.	.	4	0	0	1	.	11
Malarial fever . . W	5	6	.	6	.	.	10	7	.	34
Malarial fever . . C	9	11	.	22	.	.	10	8	.	60
Hæmorrhagic mala W	.	.	.	.	.	.	.	1	1	2
Hæmorrhagic mala C	.	.	.	.	.	.	.	0	0	0
Continued malarial W	.	0	.	5	1	3	.	.	.	9
Continued malarial C	.	1	.	9	4	2	.	.	.	16
Gastric fever . . W	.	1	.	1	.	1	.	.	1	4
Gastric fever . . C	.	0	.	0	.	0	.	.	0	0
Catarrhal fever . . W	1	.	.	0	.	.	.	.	.	0
Catarrhal fever . . C	1	.	.	1	.	.	.	.	.	2

This increased susceptibility to our continued types of fever, as well as yellow fever, is a significant and interesting point and will be brought out more fully when I show the Consolidated Mortuary Record of Savannah from 1854 to 1883 inclusive. The above table also shows the uncertain state of our nosology and the elasticity of our nomenclature. If you can exclude typhoid fever you may call our continued types of fever anything you please.

The tenth census states as to typhoid fever, "as causing a somewhat greater proportion of deaths among the whites than among the blacks, the figures being, for the whites, 33.9 and

for the colored 31.7 per 1,000 deaths from specified causes. Up to the age of 15 the number of deaths from this cause is proportionately greater among the colored." And as to malarial fevers: "The proportion of deaths from these causes is decidedly greater in the colored (48.3) than in the whites (30.7), but this rule by no means holds good in all the grand groups. The excess in the proportion of deaths from these causes among the colored population occurs throughout all the groups of ages."

As to the exanthematic fevers, I have already mentioned the high mortality from measles among the colored children. We have a history of its malignancy in the Sandwich Islands, where a large number of the population were swept away.

It has long been recognized that the negro is peculiarly susceptible to smallpox and that the mortality is high. In a small epidemic in 1891, 44 cases were reported to the Health Officer, of which 4 were white and 40 were negroes. There was one death among the whites and 21 among the colored, that is, a mortality of 50 per cent. Two of these were found dead and seven *in extremis*, showing their usual carelessness and indifference. Smallpox was introduced into Savannah in 1865, 1866, 1867, 1875, 1876, 1882, 1884 and 1885, during all of which times the disease went hard with the negroes, and they who recovered were severely pitted. In vaccinating them with lymph from the calf many suffered from severe sores which were long in healing. As I have stated the colored are not susceptible to scarlatina, or the allied poison of diphtheria. These diseases, moreover, are not common with us.

Cholera was brought into Savannah in 1866, resulting in 85 deaths among the whites and 211 deaths among the colored. In 1867 there were 12 deaths from this disease among the whites and 17 among the colored; and in 1868, 13 deaths among the whites and 18 among the colored.

It is an interesting and significant fact that prior to emancipation the negro was quite exempt from yellow fever. In 1854 there were in Savannah, from this disease 625 deaths among the whites and only 10 deaths among the colored, while in 1876 there were 771 deaths among the whites and 125 deaths

among the colored. In other words, in 1854 about 5 per cent. of whites died of yellow fever, and only one-eighth of one per cent. of colored, while in 1876 about $4\frac{1}{2}$ per cent. of whites died and very nearly one per cent. of colored. Of course these figures are only approximately correct as no account has been taken of the exodus from the city at these times of peril. These figures will be seen in a table giving the consolidated mortuary record of Savannah from 1854 to 1886 inclusive, which I shall introduce later, and which also shows the better physical status of the negro before emancipation.

The great strides which have been made in recent years in the etiology of disease through bacteriological research have thrown much light upon susceptibility to disease, the predisposition to certain morbid processes which some have more than others. And this investigation helps as greatly in the study of racial tendencies. In Europe where so much has been done in this way geographical areas and nations living under their different conditions can be mapped out on pathological lines. This same work is being done in America, and it cannot be very long before the colored race and its relations to the inimical factors which produce disease and death, will be better understood.

The susceptibility of the colored to tuberculosis is now generally recognized; in other words they succumb to the bacillus tuberculosis. To pneumonia, another germ disease, they also quickly succumb, and on this line I have but to repeat what I have already said in treating of the different diseases.

Recent researches are showing us that the various pathological processes in the production of tumors, and especially the malignant growths, are the direct outcome of minute organic forms, certain fungi and protozoa, and it cannot be long before we shall know definitely the proximate causes of the many varieties of carcinoma and sarcoma, diseases which are, according to English statistics, on the increase. The figures at my disposal are too small to have any value; so far as they go they show that the whites are still more liable to cancer than the colored. The tenth census states: "In males the proportion of deaths per 100,000 of living population is, for

the whites 20.54, and for the colored 5.85 ; in the females the proportions are, for the whites 35.44, and for the colored 19.32.' From all I can learn, however, cancer is more common now than before emancipation when the vital equation of the race was better. The cases I meet are very rapid, especially of the *cervix uteri*. The most malignant sarcoma I have ever seen was in a mulatto. Of osteo-sarcoma I have seen but four cases, three negroes and one white. Of the two cases of malignant lymphoma I recall, one was white and one colored.

It is an interesting fact that just across the border from malignancy there are certain tumors to which the negro is very liable. Of these the fibromata are especially noticeable ; the uterine fibroids, fibroma molluscum of the skin, the tendency to keloid tissue, all show this great fibrous-tissue proliferation. I have seen uterine fibroids of enormous size, and especially among the mulattoes. I am constantly called upon to remove fibromas of the lobule of the ear caused by the irritation of the ear ring. Fibromata of the neck are common, starting from enlarged lymphatic glands, a frequent trouble with them.

The formation of keloid tissue and hypertrophied scar-tissue seems naturally to follow this connective-tissue proliferation. I have seen it mostly on the breast and neck following operations. Erythema nodosum seems but the first step in the pathological process producing fibroma moluscum. I have seen but two cases of this trouble and they were both colored.

On this same line I may mention arterio-sclerosis which I believe to be a not uncommon disease among the colored, although rarely recognized as such. We get but few chances for post-mortems which would help us so much in our pathological tables. A further and more pronounced condition, atheroma, is constantly found. I have recently had a most remarkable case of this kind in a negro about fifty-five years old who looked seventy, and whose brachial artery was subcutaneous and outside the deep fascia from the axilla to the elbow. By pinching up the artery with the finger all circulation in the arm was controlled. Its atheromatous condi-

tion was very evident. The large contingent put down as dropsy, with heart and kidney complications, has probably in many cases an arterio-sclerosis basis. In my own practice I have seen more cases of aneurism among the colored than among the whites. Dr. A. Corre in his voluminous work (*Traité clinique des Maladies des Pays Chands*, Paris, 1887), writes, p. 463, in a foot note, "nous avons été surpris du grand nombre d'anévrysmes artériels qu'on rencontre chez les noirs et les mulâtres." Cerebral apoplexy and paralysis have a bearing here and I have drawn up the following table showing the deaths from aneurism, apoplexy, and paralysis.

YEAR.		1884	1885	1886	1887	1888	1889	1890	1891	1892	Total.
Aneurism	W	1	0	0	0	2	0	0	2	2	7
	C	1	2	0	0	1	1	2	1	1	9
Apoplexy	W	8	4	4	4	6	5	3	9	3	46
	C	4	8	11	2	2	8	3	9	5	52
Paralysis	W	15	6	14	10	13	12	15	9	15	109
	C	15	9	12	11	20	11	7	17	11	113

These figures are quite too small to draw any conclusions from. The colored at least keep well apace with the whites.

According to the tenth census the deaths from apoplexy and paralysis are greater among the whites (35.1) than among the colored (15.9). I have more confidence in my own figures.

The negro shows a tendency to suppuration ; in other words, he has less resistive power against those purifacient cocci which cause the ordinary suppurations in the body. On the slightest provocation he has glandular swellings followed by abscesses in inguinal, cervical, and axillary glands, acute abscess of the tonsil, onychia, and suppurative foci generally. The tubercular syphilide is frequently followed by a pustular one ; variola produces marked suppuration and pitting. Cuts and contusions often result in suppuration. All this shows a

lack of resistive power against certain germs, especially the staphylococcus, and is another minus factor in lowering the vital equation. While not directly causing death, it may do so indirectly and appear in the mortuary records under other headings. Corre, above quoted, also mentions this predisposition, having met with many cases of cold abscess and suppurative lymphatic glands.* In treating of hepatic abscess he states that while more common with Europeans the relative mortality is greater among the negroes. He states further that the negro, when in Africa and not transported, enjoys considerable immunity against hepatitis, but that outside his own country, even if in a similar climate, he loses this immunity and shows a mortality equal to, or greater than, that of the European.†

I have never seen a case of *delirium tremens* in the negro. I think this is easily explained. We usually find *delirium tremens* in those of tough fibre who can stand that heavy and prolonged drinking necessary to develop the disease. The negro cannot stand this heavy and prolonged drinking. He is soon done for and becomes so overcome by the drug that he must let up for a while ; or he becomes disorderly and commits some violence which sends him to the barracks and the chain-gang, where his stomach has rest and where he is enabled to pick up again. The evil effects of alcohol then are seen in acts of violence, in the inflammatory troubles which follow exposure while under the influence of the drug, and those congestions and inflammations of the thoracic and abdominal viscera which can be traced directly to alcohol in all its forms.

Dr. Billings writes : "The proportion in those parts of the country in which the colored distinction is made is much greater among the whites than among the colored, and where the distinction of parentage is made, it is much greater among the Irish than among the Germans, the figures being for the Irish 6.7, for the Germans 2.7, and for the colored .7 per 1,000 deaths from known causes. A large proportion of the deaths

* Op. Cit., p. 466.

† Op. cit., p. 797.

reported as due to alcoholism occur in connection with delirium tremens and this form of disease is rare in the colored race."*

To the physician in active practice, however, it is not necessary to see alcoholism in the form of delirium tremens to realize its evil effects. It is seen in so many side channels as inciting to congestions, catarrhal inflammations, fibrous proliferation, and a general lowering of the vital powers. It often turns the scale when the patient is fighting for his life. It diminishes his working capacity and mental acumen. These evil effects are but too plainly seen among the colored, so that a review of the deaths from delirium tremens can in no way show the extent of the evil. The large number of cases of "dropsy" and "heart disease," and evident arterio-sclerosis, is probably in a measure due to alcoholism. It must be remembered, too, that it is only the cheaper spirits they can buy, largely composed of methyl alcohol. Alcoholism directly and indirectly has always been an immense factor in the mortality of the lower classes. It played havoc among the American Indians, and the same story comes to us from India.

The question of insanity is an interesting one. In searching through the records at the Ordinary's office, I find there have been 84 cases of insanity among the whites and 133 among the colored since 1879. Through the courtesy of Dr. T. O. Powell, Superintendent of the State Lunatic Asylum at Milledgeville, I have some interesting figures bearing on the subject. In 1860 there were only 44 insane negroes in the State in a population of 465,698, or one insane negro to every 10,584. The Census of 1870 showed 129 insane negroes in a population of 545,142, or one colored insane to 4,225. The census of 1880 gave 411 colored insane, or one to 1,764 of the population.

All this shows a great increase in the liability to insanity, and while it is still more frequent among the whites, the rate at which the colored have increased in this direction promises to outstrip the whites at no very distant day. And this is to be expected when we consider the greater strain of to-day brought to bear upon them, the evil influences of syphilis,

* Vol. xii, p. 797.

alcoholism, and other irregularities. The cases I have seen have been mostly acute mania, of a religious type. Dr. Powell states that he has never seen a case of paresis in the negro. I have seen several cases of epileptic imbecility among them. Hysteria is common among the women, and the most typical cases of hystero-epilepsy I have ever seen, three in all, if my memory serves me, were among the colored. The emotional side of the negro is pronounced; you see it in all their gatherings, especially the camp-meetings, where many work themselves up into a religious frenzy.

Speaking of miscegenation I wrote in my first paper: It would be an interesting point to know the percentage of this mixed-element to the pure African. I am persuaded that it is much larger than generally believed. The census unfortunately has made no distinction in the enumeration. It is, however, a distinction which should be made, and any correct returns would point to many significant tendencies, and be a *point d'appui* for our argument. This mixed-element indicates the fusion and assimilation going on. That it bears the same social stigma as the darker color shows that the barrier between the races is a social but not a physiological one, for underneath this barrier miscegenation goes on through many channels. This new product is a large one though it is largely unstable.

Miscegenation will go on in the future as it has gone on in the past. Its illegality will be no bar to it, though the process of fusion may be retarded. To my mind race prejudice will not be in the years to come what it has been or what it now is. Time alone, throwing the days of bondage further back into the past, will in itself modify and soften these feelings of race, especially when, by the gradual fusion, the color will become lighter and the mixed-element will exhibit qualities allying it more and more to the Caucasian. It will not be in our day, of course, nor in the next generation; it may take centuries, but it will come."

The question whether the mere mixing of the races in itself results in an unstable product is one which I have not been able to answer to my own satisfaction. My

opinion is that this instability is largely the direct inheritance of a weakness and degeneracy of one or both parents, as naturally follows the laws of reproduction and inheritance. Still there seems to be a factor outside of this, a factor dependent upon miscegenation itself. The mixing of different nationalities of the white race often appears to strengthen the new products, but the ethnic chasm which separates the Caucasian from the African is too wide for nature to bridge successfully. The bridge is but temporary and gives way to the strain it must eventually bear. Whatever the true explanation may be, the fact remains that this mixed-element is an unstable one with a high rate of mortality.

In the six years which have gone by since I wrote the above I am still more convinced of the poor vital equation of this mixed element. Their susceptibility to tuberculosis is certainly very great, and I have attempted to show what a large factor this is in the general mortality. We see it in their children, in the lowered prolificness among the women, in the greater tendency to dystocia, in the frequency of diseases of the uterus and adnexa. And in spite of the fact that it represents a better class socially, who lead better lives and live altogether more hygienically. I have noticed this in their churches, and social and political organizations. The congregations of their episcopal churches are largely of the lighter color; they have more social pride, and represent altogether a better living class, and yet withal their vitality is poor.

This element, I firmly believe, is greatly on the increase. Attempts by the census to show the proportion of pure blacks to all the shades of admixture with white blood have signally failed, and we must wait another decade before we can have any reliable figures on this point. For some time I have looked upon this miscegenation as a reducing agent, chemically speaking; it withdraws vitality from the pure negro and produces a new compound which is even less stable.

Though not bearing directly upon the question of vitality it may be interesting to compare the deaths of the two races from accidents and violence. Here are the figures for Savannah at least:

YEAR.	1884	1885	1886	1887	1888	1889	1890	1891	1892	Total.
Death from acci- dent and violence	9	21	6	18	8	31	37	32	31	193
W										
C	16	19	17	19	18	33	29	29	33	213

Though there is no great disparity the figures are in favor of the whites. The tenth census states: "In that part of the country in which the color distinction is made they caused among the colored 67.6 and among the whites 43.8 per 1,000 from all deaths from specified causes."

I have thus far attempted to show the various pathological lines by which this high mortality among the colored is reached. Of its incompleteness I am only too painfully aware, for we have not yet the figures which can enable us to draw very sharp lines. The attempt has been made in the tenth census, and however much we may admire the evidence of work and care in the elaborate tables and maps, we feel that much is still lacking, and especially so on the question before us. I believe that a collective investigation among the physicians practicing in large colored communities would be the best method at our command at present, and it is this belief which has prompted me to give my own experience in a typical southern city of a sufficient population to draw fairly reliable conclusions from. This method seems to me less liable to error than the more superficial view of a large geographical area, with many gaps to be filled in.

I introduce here a table I gave in my first paper of the consolidated mortuary record of Savannah from 1854 to 1886 inclusive, which, with some allowances, gives a fair idea of the state of affairs in our city.

CONSOLIDATED MORTUARY RECORD OF SAVANNAH, GA., FROM
1854 TO 1886 INCLUSIVE.

From 1854 to 1870, and from 1870 to 1879, no reliable census is attainable; consequently I have estimated the increase of population *pro rata* yearly during said interims, and have computed the annual ratio of deaths per 1,000 of population upon this status. Although not numerically correct, the estimates are nearly enough so to give valuable statistical information.

This table proves conclusively that prior to the freedom of the African race in the United States their death ratio was smaller than that of the white race.

YEAR.	POPULATION.		NO. OF DEATHS.		Ratio per 1000 of Population.	
	Whites.	Blacks.	Whites.	Blacks.	Whites.	Blacks.
*1854 . .	12,468	8,961	1,221	308	97.9	34.3
1855 . .	Population—Whites increased yearly upon an estimated gain of one hundred and fifty-four (154).	Population—Blacks increased yearly upon an estimated gain of two hundred and sixty-nine (269).	433	292	34.3	31.6
1856 . .			466	297	36.4	31.2
1857 . .			376	264	29.0	27.0
*1858 . .			592	262	45.2	26.1
1859 . .			430	273	32.4	26.5
1860 . .			474	282	35.3	26.7
*1861 . .			563	269	41.5	24.8
1862 . .			555	372	40.4	33.5
1863 . .			459	389	33.7	34.2
*1864 . .			747	446	53.3	38.3
†*1865 . .			1,202	819	84.8	68.9
††1866 . .			530	912	37.0	75.0
††1867 . .			476	594	32.8	47.3
†*1868 . .			498	581	34.0	45.8
*1869 . .	423	429	28.6	33.1		

YEAR.	POPULATION.		NO. OF DEATHS.		Ratio per 1000 of Population.			
	Whites.	Blacks.	Whites.	Blacks.	Whites.	Blacks.		
1870 . .	14,938	13,217	450	576	30.1	43.5		
1871 . .	Population—Whites inc. yearly upon an est. gain of two hundred and eighty-four (284).	Population—Blacks inc. yearly upon an est. gain of two hundred and sixteen (216).	526	606	34.4	45.1		
1872 . .			519	636	33.4	46.5		
1873 . .			558	789	34.0	56.1		
1874 . .			394	642	24.5	45.5		
†1875 . .			394	602	24.0	42.1		
†*1876 . .			1,265	984	76.0	67.8		
†*1877 . .			375	623	22.1	42.2		
1878 . .			362	626	21.0	41.8		
1879 . .			17,493	15,163	416	686	23.7	45.1
1880 . .			18,229	15,019	462	885	25.3	58.8
1881 . .	19,114	15,765	557	903	29.1	57.2		
1882 . .	20,514	16,819	375	740	18.2	43.9		
1883 . .	23,839	16,652	488	659	20.4	39.5		
1884 . .	25,362	19,150	469	703	17.9	36.7		
1885 . .	25,720	19,111	333	659	13.7	35.4		
1886 . .	26,675	19,111	458	953	17.1	49.8		

*Yellow fever 1854—Deaths, whites 625, blacks 10. *1858—Deaths, whites 112, blacks 2. *1861—Deaths, whites 4. *1864—Deaths, whites 14. *1865—Deaths, whites 1. *1868—Deaths, whites 1. *1869—Deaths, whites 1. *1876—Deaths, whites 771, blacks 125. *1877—Deaths—whites 4. †Small pox introduced by United States troops 1865, 1866, 1867. †1875, 1876, 1877, †1882—One case. †1884—Two cases. †1885—One case. No accurate account can be given as to deaths; it was very heavy in 1865 and 1866. †Cholera brought from New York by United States troops. 1866—Deaths, whites 85, blacks 211. †1867—Deaths, whites 12, blacks 17. †1868—Deaths, whites 13, blacks 18.

I am indebted to compilation of our honored townsman, Dr. W. Duncan, for tabular statement of deaths from 1855 to 1869 inclusive.

J. T. MCFARLAND, M. D., Health Officer.

In this table we find that from 1854 to 1863 more whites died proportionately than colored. Then from 1864 to 1876 the white mortality was still in excess of the colored. The year 1866, however, was the turning point, for with the exception of 1876, the year of the yellow fever, the colored have greatly exceeded the whites in mortality.

From 1880 the returns show that twice as many colored as whites die in proportion to the population. Some years show an even greater mortality. In 1880, in the ratio per 1000 of population, the figures stand 25.3 for the whites and 58.8 for the colored; in 1882, 18.2 for the whites, and 43.9 for the colored; in 1884, 17.9 for the whites, and 36.7 for the colored; in 1885, 13.7 for the whites, and 35.4 for the colored; in 1886, 17.1 for the whites and 49.8 for the colored. This table shows conclusively, for Savannah at least, that prior to emancipation the death rate of the colored was less than that of the whites, but that since their freedom their mortality has greatly exceeded that of the whites. It would be indeed valuable for our subject could we get similarly prepared tables from other parts of the country.

To this I now add a table which continues the figures up to 1892 inclusive, which shows the same high rate of mortality among the colored, a mortality, which, making all due allowance for error, about doubles that of the whites. I omit, however, the estimated population and the ratio per 1,000 deduced from it as the figures are largely guess-work. It is sufficient to remember that the population is now about 45,000, and that the whites exceed the colored by about 5,000.

YEAR.	No. of Deaths.	
	White.	Colored.
1887	458	798
1888	366	665
1889	384	685
1890	479	870
1891	464	746
1892	468	834

In my first paper, in conjunction with the above consolidated mortuary record of Savannah, I composed the returns I was able to get from Charleston, New Orleans, Richmond, Nashville, Chattanooga, and Knoxville, and I found results tallying fairly well with those of our own city. I give here a table showing the relative death rate in six cities, where there is a sufficient colored population to make a comparison, for the census year 1879-80.

CITIES.	Deaths per 1000 of living population.
Louisville . . W } C }	20.04 34.75
Washington . W } C }	17.80 35.45
Richmond . . W } C }	19.12 31.97
Baltimore . . W } C }	22.71 37.61
New Orleans. W } C }	22.41 35.61
Charleston . W } C }	23.78 45.00

I have not been able to obtain a sufficient number of reports from other cities to carry out, as it should be done, a comparative statement of the mortality records, nor does it come within the scope of this paper to do so. It is sufficient for my argument that they all bear testimony to a large mortality among the colored and greatly in excess of the whites. Of course I am aware that the mortality falls outside the

cities ; and the reasons for this are quite too apparent that I should elaborate them here. The one important point in my argument is, that the negro cannot stand the sharp competition in the cities, that when thrown directly in the struggle for existence with the white race he cannot hold his ground, that the more densely populated the country becomes and the fiercer the struggle, the more he must lose ground, and that his greater mortality shows us the extent of his defeat.

Having shown, as I hope, this greater mortality and the various ways by which it is brought about, it will be interesting to see how this accords with the teachings of ethnology and biology which treat the subject from the standpoint of the naturalist. It is only in this way we discover the relationships of organic forms from the lowest to the highest, and the laws governing the survival and death, the increase and decrease of species and races, with man as a part of the animal kingdom.

And first and foremost, the inferiority of the negro as compared with the Caucasian.

It would hardly seem necessary to dwell at any length upon the conditions which stamp the African race as one greatly inferior to our own. When writers like Mr. Tourgée ignore this fact, and not only ignore it but seem to put the two races on an equality, it is not necessary to discuss the question with him ; but for the sake of our argument we shall indicate briefly the salient points of difference between the Caucasian and the African as taught us by ethnology and comparative anatomy.

The pure negro is the representative of a race whose natural habitat is the African mainland. Though spread over a large area it shows a greater uniformity in physique and moral type than is to be found in the other great divisions of mankind. To the ethnologist it marks a type the lowest in the scale of humanity.

A. H. Keane gives us the following points as indicating the low type and nearer approach in body to the quadrumana or anthropoid apes :

“(1) The abnormal length of the arm, which, in the erect position, sometimes reaches the knee-pan, and which, on an

average, exceeds that of the Caucasian by about two inches ; (2) prognathism, or projection of the jaws (index number of facial angle about 70, as compared with the Caucasian, 82) ; (3) weight of brain, as indicating cranial capacity, 35 ounces (highest gorilla 20, average European 45) ; (4) full black eye with black iris and yellowish sclerotic coat, a very marked feature ; (5) short, flat snub nose, deeply depressed at the base or frontal suture, broad at extremity, with dilated nostrils and concave ridge ; (6) thick protruding lips, plainly showing the inner red surface. (7) very large zygomatic arches—high and prominent cheek-bones ; (8) exceedingly thick cranium, enabling the negro to butt with the head and resist blows which would inevitably break any ordinary European's skull ; (9) correspondingly weak lower limbs, terminating in a broad flat foot with low instep, divergent and somewhat prehensile great toe, and heel projecting backwards ('lark heel') ; (10) complexion deep brown or blackish, and in some cases even distinctly black, due not to any special pigment, as is often supposed, but merely to the greater abundance of the coloring matter in the Malpighian mucous membrane between the inner or true skin and the epidermis or scarf skin ; (11) short black hair, eccentrically elliptical or almost flat in section, and distinctly woolly, not merely frizzly, as Richard supposed on insufficient evidence ; (12) thick epidermis, cool, soft, and velvety to the touch, mostly hairless, * * * ; (13) frame of medium height, thrown somewhat out of the perpendicular by the shape of the pelvis, the spine, the backward projection of the head, and the whole anatomical structure ; (14) the cranial sutures, which close much earlier in the negro than in other races. *

These anatomical characteristics are well known to every careful observer ; they mark a distinct race of mankind and show conclusively an inferior type. The natural habitat of the race is in itself indicative of its inferiority, for whatever Egypt may have been in the past, and history certainly points to a high order of civilization ages before the Christian era, Africa for centuries has been the home of the savage. It is

* *Encyclopædia Britannica*, Article "Negro."

the cranial and facial characteristics which have the direct bearing upon the points at issue. The prognathism, the facial angle, the weight of the brain, the thickness of the skull, and the early closure of the cranial sutures, all point to a lower intellectuality and an inferior nervous system.

The negro infant starts apparently with a great advantage over the white child; it is more precocious in every way, and maturity comes sooner. But this rapid growth soon reaches the end of its tether, and at a time when the negro has attained its full growth, the white child is but beginning to develop qualities which in time advance it to a point unattainable by its less fortunate rival. Even when educated up to a certain point by the efforts of, and association with, a higher race, the mind is in a condition of unstable equilibrium which reverts in time back to its original level when the civilizing influences have been withdrawn. Throughout the animal world whenever artificial conditions have been brought to bear to produce results different from those which nature attains by her slow methods, the new products when left to themselves fall back to their original starting points, or but little in advance of them. It will be like the stone of Sisyphus. In the two centuries and a half of association with the Caucasian the race in certain directions has been much benefited by the higher civilization. If these associations were to be suddenly and completely cut off, and the race were to be left to its own resources, its future would be a retrogression rather than an advance.

In this connection let me quote from Sir Spencer St. John, a most impartial and moderate critic, who, in his "Hayti or the Black Republic,"* gives us a dismal picture of the state of affairs in that unfortunate country. I am glad to find my own views substantiated by so good an authority.

"The vexed question as to the position held by the negroes in the great scheme of nature was continuously brought before us whilst I lived in Hayti, and I could not but regret to find that the greater my experience the less I thought of the capa-

* Hayti or The Black Republic. By Sir Spencer St. John, K. C. M. G., New York, 1889.

city of the negro to hold an independent position. As long as he is influenced by contact with the white man, as in the southern portion of the United States, he gets on very well. But place him free from all such influence, as in Hayti, and he shows no signs of improvement; on the contrary he is gradually retrograding to the African tribal customs, and without exterior pressure will fall into the state of the inhabitants of the Congo. If this were only my own opinion, I should hesitate to express it so positively, but I have found no dissident voice amongst experienced residents since I first went to Hayti in January, 1863.

"I now agree with those who deny that the negro could ever originate a civilization, and that with the best of educations he remains an inferior type of man. He has as yet shown himself totally unfitted for self government and incapable as a people to make any progress whatever. To judge the negro fairly one must live a considerable time in their midst, and not be lead away by the theory that all races are capable of equal advance in civilization." p. 134.

I am speaking now of course of the race without any admixture of white blood; with it the problem becomes a different one; the intellectual level rises, and the more this element enters into the combination the nearer the new product approaches the Caucasian. We may meet with the intellect of an Alexander Dumas, or Dumas, fils, though I think the product a rare one. It is in the large mixed-element that we find examples of those who have risen above the multitude of their race and have shown qualities which ally them closer to the superior race. To writers like Mr. Tourgée this factor of miscegenation does not enter at all into their calculations. They speak of whites and blacks as though it were a question of color only, with a sharp color line separating the two races, a mere difference in the amount of pigment in the Malpighian layer. One would think from their treatment of the subject that equal political rights and equality before the law meant equality moral, spiritual and intellectual. They lump together the entire colored population as a homogeneous mass to be measured by one standard. They bring forward ex-

amples of colored men who have attained considerable reputation, and have shown, perhaps, fine mental parts, to show the beneficial influences of education and civilization upon the African, and the possibilities of the race, and ignore the influence of the white admixture, and the credit due thereto.

And with this evident inferiority what can we learn further from biology?

A deterioration in physique may be looked upon as the natural result of the many influences at work arising from the transporting of the race to a foreign soil to be thrown into the struggle for existence against a superior race, a struggle which can have no ultimate issue but defeat, and by defeat I mean an inability to maintain the distinctive characteristics of the race. The struggle will be a slow process of fusion by which the weak and unstable elements will disappear while that which has any permanency will become so blended with the dominant race as to lose its individuality. Of the stable and the unstable the latter is by far the greater; its instability can be measured by the physical degeneracy. Even to-day to call the colored race the African race is something of a misnomer because it has undergone many modifications. A change in language, in soil, and in climate, a change of surroundings and associations are potent influences to eventually destroy the original African traits. This struggle may, perhaps, be better described as a process of assimilation by which the elements ill-adapted to the growth of the dominant race are thrown off, while that which is assimilable becomes gradually absorbed into the main growth.

Let us glance a little more minutely into these factors of change and decay. The change of habitat alone, a change of soil and climate, has a certain influence. Man, like the animals and plants, bears the stamps of geographical areas. A race indigenous to a certain country acquires through many generations characteristics the formation of which can be traced to climatic and telluric causes. One of the most interesting departments of biology is the study of the geographical distribution of animals and plants; and man is no exception, for in him, too, we can trace the influences of the ground he

treads and the air he breathes. And when man is removed from his home to a distant country, and is brought under different climatic and telluric conditions, he feels the change in proportion as the new environment differs from the old. Nature at once goes to work to adapt the new-comer to his new surroundings. The greater the change the harder the process of adaptability and the greater the waste and the loss of life. The medical histories of wars in distant climes in which Europeans have figured show that the loss of life from a new environment has often equalled, if it has not exceeded, that from the casualties of war. The Esquimaux can as little live in the tropics as the Hottentot in the polar region.*

Now while the change of the African to America has been more in longitude than in latitude it must still have an influence in modifying the race. The negro without any other modifying influences would be a different man five hundred years hence from the one just transported from his natural home.

But a factor much more potent is the struggle for existence, and not only a struggle within the race but a struggle outside with a superior race. There is no law in the physical world more relentless than this very struggle for existence and survival of the fittest. From the cradle to the grave it is one continuous fight with man and the elements. It is a struggle for mere living, a struggle for ease and comfort, a struggle against exposure, privation and disease; and in this struggle the weaker die and the stronger live. We may talk of universal brotherhood, but the stronger will rise and rule and the weaker will go to the wall. The denser the population the thicker the fight. It is in the great cities that we see this struggle at its fiercest—the poorer and weaker on one side,

*An interesting example among the lower animals of the fatal influences of a change of habitat is seen in the monkeys brought to this country. They almost invariably die from consumption. I once examined the bodies of a number of monkeys from our menageries and zoölogical gardens, and in every case I found pulmonary tuberculosis in all its stages. The change from the pure air of the forest to the confined and vitiated air of our centres of population is fatal to them.

and the stronger and richer on the other. It is the difference between poverty, hunger and dirt, and ease and comfort and luxury, and a difference greater still, a difference in the sick list and in the death rate ; for with poverty and close quarters, with dirt and exposure and crime, come sickness and death. The situation of the colored race is a peculiar one. After being carried off from their home to a distant land and held in bondage for years, they are suddenly set free and thrown upon their own resources. That they have even in a measure stemmed the tide is indeed to be wondered at. During slavery it must be conceded, I think, that so far as the merely physical man was concerned they were better off. Such bondage would be well physically for a large portion of the white race. They were out of the struggle for existence with their superiors ; they were cared for like so many valuable animals ; it was to the interests of their owners that they should be ; though worked hard, they led regular lives ; the dissipations and excesses which enter into the life of a free people they were withheld from ; when sick they had the best medical attention obtainable ; and all the information which I have been enabled to obtain has satisfied me that the race was a healthy one, even healthier in the main than the white.

But since the war and emancipation things have been reversed. Suddenly thrown upon their own resources their struggle began in the midst of things; freedom gave loose reins to the animal ; the doors were opened wide to the vices and excesses of a material civilization ; their life became an irregular one ; these vices and excesses which like parasites have grown with the growth of our civilization, became a part of their life, and these parasites in their new soil have shot down their roots deeper and have obtained a firmer foothold. This has been the history of the introduction of civilized vices into all uncivilized communities ; whiskey, good or bad, certainly disagreed with the poor American Indian, and to-day in India it is playing sad havoc with the multitude. The explanation is that, however small self-control over the appetites exists in the Caucasian it is practically wanting in the savage who drains his cup to the dregs. It is bad enough for the white man but it is worse for his inferior.

Certain writers, like Mr. Tourgée, for example, in their predictions for the future, rely upon "the greater prolificness of the negro," as though the prolificness of any plant or animal were a fixed quantity. But the naturalist knows within what wide limits the prolificness of any plant or animal may vary. That under natural and favorable conditions this prolificness shows a certain rate of increase, and that, on the contrary, when the natural conditions are removed and inimical factors are brought to bear, the rate of increase falls, and may continue to fall to complete extinction. In the study of different organic forms we find of course great differences in the prolificness, depending upon certain laws which have been fairly well worked out.

No one, to my knowledge, has more clearly brought this out, and especially so in its bearings upon the multiplication of the human race, than Herbert Spencer. In his *Principles of Biology*, Part VI, he treats of the laws of multiplication, an elaboration of a paper which originally appeared in the *Westminster Review* for April, 1852, entitled "A Theory of Population deduced from the General Law of Animal Fertility." Here he points out the antagonism between growth and sexual and asexual genesis, between development and sexual and asexual genesis, between expenditure and genesis, and between nutrition and genesis. He shows us how the vitality of any organic form divides itself between individuation and genesis, between maintaining individual life and increasing the species. He shows us that where these forms are minute and low in the organic scale, with little or no differentiation of parts, and where individuation is almost nothing, the genesis is enormous; and where, as we rise in the organic scale, there is more individual growth and development, and consequently a greater expenditure of the vitality in this direction, the genesis falls. And further, that inimical factors which in any way reduce the normal quantum of vitality, not only reduce the amount expended upon individuation, but also upon genesis, and the prolificness must consequently fall. We can trace this "moving equilibrium" between individuation and genesis in man as well. Therefore we expect to find in the higher

types of man, with greater differentiation and a more complex brain and nervous system, and where there must necessarily be a greater expenditure towards individuation,—and where genesis itself is more elaborate,—a lower prolificness. And, on the contrary, we find, as we might expect, a higher rate of prolificness among savages than among the Caucasian. But this holds good of the savage only as he is found in his own habitat, and under the natural conditions of which he is the product. Remove him from his natural soil and climate, change his conditions of life and surroundings, and throw him into competition with a superior race, and in a civilization which has been brought about by the growth of that race,—a civilization of which he is not the product,—and he is placed in an abnormal condition, and must suffer physically. And this will show itself in a general deterioration of physique, in a higher rate of mortality, and in a lowered rate of increase.

We see again in certain organic forms a sort of law of compensation where nature seems to provide for great loss of life by a greater prolificness, but these two terms stand to each other as correlatives rather than cause and effect. It is very evident that there can be no such relationship at all comparable in the higher forms of life. Here where inimical factors arise which render individuation more difficult and more precarious, the expenditure of vitality becomes greater in this direction, and so much the greater the more complex is the individuation; and in like manner the genesis suffers the more, the more complex its processes are. And thus a race which is struggling hard to maintain individual life, and which suffers in addition from an unhealthy living, and from excesses of all kinds, and whose death rate is high as compared with the more favored race, cannot maintain its normal rate of increase, but, on the contrary, must show a diminished prolificness.

And another point worthy of consideration is this: It is not so much a question of How many offspring? but How many matured and perfected individuals? In other words, what is the ability to maintain life when started? And this is what I mean by the vital equation. The figures I have given of

the low rate of infant mortality in Japan are interesting as showing how, in spite of the low birth rate in that country, the low death rate among infants and young children up to the fifth year has led to a large increase in the census returns. And how much better this state of affairs is from an economic standpoint than that of a high rate of genesis with a high infant mortality. How much greater the loss of vitality from the general store of the race! In the first instance there is so much the more vitality to be expended upon individuation, *and that means racial progress*; in the second case, a large amount of the vitality of the race is lost in blighted and immature individuals, and the general level of individuation is lowered, *and that means racial decay*. The laws of propagation have been violated in some way, and the vital equation of the race lowered. And it naturally follows that the more complex the problem of life becomes, the more closely these inimical factors are brought to bear, and the more evident and far-reaching will be the destructive influences upon the race. And here in the United States, which is becoming more and more densely populated with the Caucasian, where the struggle for existence is becoming fiercer, with a great increase in material civilization and all the requirements devolving upon it, all the inimical factors I have enumerated will bear with redoubled force.

And still another point worthy of consideration is this, that despite caste and social barriers, there can be, and is, a physiological fusion of the two races. The extent of this fusion is seen in the mixed element. The exact proportion of this element to the pure negro we are unfortunately unable to indicate, the attempts made by the last census being quite unsatisfactory. This element, I am persuaded, is much greater than is generally believed. I also think that it will increase with much greater strides in the future as the social barriers to miscegenation are removed. As I have attempted to show, this element is largely an unstable one, and of a low vital equation. The process may be likened to a reducing agent, chemically speaking, which borrows vitality from the pure race to produce a new compound which is unstable. The

process may be represented in a different way, again, where the dominant race can be likened to a great polyp which, having surrounded and ingested a smaller community of cells than itself, proceeds to appropriate that which is assimilable, and to throw off that which is foreign and non-assimilable. This great selective process is evident to-day between the two races. Thus thrown into intimate contact they cannot develop on separate lines, each working out its own racial destiny ; there must be a fusion more or less rapid and a struggle for supremacy, where the dominant race holds to its racial traits and its civilization, modified, perhaps, to a certain extent, by what it has appropriated from the inferior race.

I have thus attempted to show that, according to the census, the colored race has not increased at the same rate as the whites, that the colored race is an inferior race, that its physique has deteriorated, and with a consequent higher death rate ; that the mixed element has a lower vital equation, and that all these results are explainable from the teachings of ethnology and biology.

As to the future of the negro in the United States I can see but one goal, and that is defeat, and by defeat I mean an inability to maintain the race as a race with all its characteristics. With the gradual fusion there will be a larger and larger mixed class ; the lighter this element becomes the more the African fades out, and the more the new product approaches the Caucasian. The term "African" will become more and more of a misnomer. Even in the few years, comparatively speaking, which have gone by, the colored population is a quite distinct body from its African ancestors. In this process of fusion and assimilation there will be a great loss of life, but there will long be a Caucasianized element, becoming larger and larger up to a certain point, and I can believe in a vanishing point, so to speak, where it will be hard to trace the alien blood. We see it in many individuals to-day. Its different grades are but as mile-posts on the road to extinction. All this will require time, and probably centuries will go by before the extinction of the race, as a race, will be accomplished.

In the mean time I can see no ground for fear of any great clash between the two races, so much dwelt upon by certain writers. This is a problem which will solve itself. There are more serious social and political problems before us to-day than the poor negro. But of course the care and treatment of this great mass for the present and the near future is a great problem. To most minds the course to be pursued is plain enough, namely, to elevate them, Caucasianize them as far as they will permit it, to treat them as we should treat the lower classes among our own race, educate them, improve their physical condition where we can, in short, make useful citizens of them. How this may be best accomplished involves many questions of government and social science, with which, of course, I have nothing to do.

The whole question but resolves itself into this, that the world has reached a point where the Caucasian is supreme, and all else must give way before him.

SAVANNAH, GEORGIA,
June, 1863.

The Wilder Quarter-Century Book.

A collection of original papers dedicated to Professor Burt Green Wilder at the close of his twenty-fifth year of service in Cornell University (1868-1893), by some of his old students. 8°, 493 pp., Portrait (Japan proof), 26 plates, and 36 figures in the text. Price, \$5.00. Address the

COMSTOCK PUBLISHING CO., Ithaca, N. Y.

TABLE OF CONTENTS AND OF CONTRIBUTORS.

	PAGE.
PORTRAIT OF PROFESSOR BURT GREEN WILDER. Engraved by John P. Davis, <i>Secretary of the Society of American Wood-Engravers</i> Frontispiece.	
LIST of the more important scientific publications of Professor Wilder	I
TABLE showing the number of students taught by Professor Wilder	9
DAVID STARR JORDAN, LL.D., <i>President of the Leland Stanford Junior University</i> . Temperature and Vertebræ—A Study in Evolution, Being a Discussion of the Relations of the Numbers of Vertebræ among Fishes to the Temperature of the Water and to the Character of the Struggle for Existence	13
ANNA BOTSFORD COMSTOCK, B.S., <i>Member of the Society of American Wood-Engravers, Natural History Artist</i> . I. Engraving of a Cat (following page 36). II. Engravings of Moths (Plate I, illustrating the Essay on Evolution and Taxonomy).	
JOHN HENRY COMSTOCK, B.S., <i>Professor of Entomology and General Invertebrate Zoology in Cornell University, and Professor of Entomology in The Leland Stanford Junior University</i> . Evolution and Taxonomy. An Essay on the Application of the Theory of Natural Selection in the Classification of Animals and Plants, Illustrated by a Study of the Evolution of the Wings of Insects, and by a Contribution to the Classification of the Lepidoptera, (with three plates, and thirty-three figures in the text)	37
EUGENE ROLLIN CORSON, B.S., M.D., <i>Physician and Surgeon, Savannah, Ga.</i> The Vital Equation of the Colored Race and its Future in the United States	115
LELAND O. HOWARD, M.S., <i>First Assistant Entomologist, U. S. Department of Agriculture, Washington, D. C.</i> The Correlation of Structure and Host-Relation among the Encyrtinæ	177
THEOBALD SMITH, Ph.B., M.D., <i>Chief of the Division of Animal Pathology, Bureau of Animal Industry, U. S. Department of Agriculture, Professor of Bacteriology and Hygiene in the Medical Department of the Columbian University, Washington, D. C.</i> The Fermentation Tube with Special Reference to Anaerobiosis and Gas Production among Bacteria, (with one plate)	187

Table of Contents

WILLIAM CHRISTOPHER KRAUSS, B.S., M.D., <i>Physician, Professor of Pathology, Medical Department of Niagara University, Buffalo, N. Y.</i> Muscular Atrophy Considered as a Symptom, (with one plate and three figures in the text)	235
SUSANNA PHELPS GAGE, Ph.B. The Brain of <i>Diemictylus viridescens</i> , from Larval to Adult Life, and Comparisons with the Brain of <i>Amia</i> and of <i>Petromyzon</i> , (with eight plates)	259
HERMANN MICHAEL BIGGS, A.M., M.D., <i>Professor Materia Medica, Therapeutics, and Nervous Diseases, Bellevue Hospital Medical College, Visiting Physician and Pathologist, Bellevue Hospital, Neurologist and Pathologist to the Hospital of the Work House and Alms House, Chief Inspector Div. Path. Bact. and Disinfection, N. Y. City Health Department.</i> A Bacterial Study of Acute Cerebral and Cerebro-Spinal Lepto-Meningitis	315
JOHN CASPER BRANNER, Ph.D., <i>Professor of Geology in the Leland Stanford Junior University.</i> Observations upon the Erosion in the Hydrographic Basin of the Arkansas River above Little Rock	32
VERANUS ALVA MOORE, B.S., M.D., <i>First Assistant in the Division of Animal Pathology, Bureau of Animal Industry, U. S. Department of Agriculture, Assistant Demonstrator of Pathological Histology in the Medical Department of the Columbian University, Washington, D. C.</i> The Character of the Flagella on the <i>Bacillus Cholerae Suis</i> (Salmon and Smith), <i>Bacillus Coli Communis</i> (Escherich), and the <i>Bacillus Typhi Abdominalis</i> (Eberth), (with one plate)	339
GRANT SHERMAN HOPKINS, D.Sc., <i>Instructor in Anatomy, Microscopy, and Embryology in Cornell University.</i> The Lymphatics and Enteric Epithelium of <i>Amia calva</i> , (with two plates)	367
PIERRE AUGUSTINE FISH, B.S., <i>Instructor in Physiology, Vertebrate Zoology, and Neurology in Cornell University, and Instructor in Zoology, Marine Biological Laboratory at Wood's Holl.</i> Brain Preservation, with a Résumé of some Old and New Methods, (with one plate)	385
WILLIAM RUSSELL DUDLEY, M.S., <i>Professor of Botany in the Leland Stanford Junior University.</i> The Genus <i>Phyllospadix</i> , (with two plates)	403
SIMON HENRY GAGE, B.S., <i>Associate Professor of Anatomy, Histology, and Embryology in Cornell University.</i> The Lake and Brook Lampreys of New York, Especially those of Cayuga and Seneca Lakes, (with eight plates)	421