

STERILITY IN THE UNITED STATES.

For some time we have been accustomed to look with rather curious interest upon the decreasing fecundity of the French nation and upon the various plans devised by its leaders to avert a gradual national extinction. But it appears that we may very well devote our attention to a similar state of affairs at home where, according to Dr. George Engelmann's statistics in a recent number of the *Journal of the American Medicine Association*, equally startling conditions confront us. The writer's conclusions are based upon a study of 1700 cases of his own in St. Louis, the statistics of Dr. Chadwick of Boston, the vital statistics of Dr. Wilbur of Michigan and various others. While the numbers studied are comparatively small, conditions in the different localities correspond remarkably with one another and would seem to be a fair index to those of the entire country. The conclusion is that nowadays twenty per cent. and over of married women are childless, while in the early days of the country the genealogical records show that only two per cent. were sterile. In connection with sterility the writer has studied the closely correlated conditions of fecundity, miscarriage and divorce; and, so far as the data allow, he distinguishes between absolute sterility—that of the woman who has never conceived—and relative sterility—that of the woman who has conceived but never given birth to a full-term, living child.

Sterility among the laboring classes of St. Louis is 21 per cent., 23.6 per cent. among native Americans and 26.3 per cent. among Americans of German parentage; in Boston, 23.7 per cent. of the American-born laboring class are sterile, 27.2 per cent. of the Americans of Irish parentage; throughout Massachusetts, in all classes

of the American-born, the percentage is 20.2. The writer's own records of Irish and Germans give only 17 per cent. and the average among the foreigners of Massachusetts is only 13.3 per cent. Among negroes (St. Louis) sterility is 24 per cent. The records of foreign countries show a great variation from the lowest, 2.5 per cent. in Norway and 2.8 per cent. in a district near Moscow, to 27.3 per cent. in Paris, Lyons and Rouen, though in some of the departments of France the percentage is much lower. Thus it appears that everywhere sterility varies directly with wealth and luxury.

The number of relatively sterile is hard to estimate but is less than that of the absolutely so; the condition is admitted by about 8 per cent. of all married women but the actual percentage is necessarily larger. The generally accepted estimate of one miscarriage to every 5.5 labors at term appears to be altogether erroneous. The writer finds one miscarriage to every 2.8 labors at term, varying from 1 to 2.77 among the native Americans to 1 to 4.3 among the Irish. The Boston figures correspond almost exactly. No European data upon these points are available but it is the writer's opinion that the frequency of miscarriage would correspond with the increase of sterility, *e. g.*, in France.

As to fecundity, the writer finds 2.1 children to each married couple in St. Louis including in his estimate all marriages, sterile and otherwise. This is the highest fecundity found among the native-born in this country; in Boston the percentage is 1.7 and in the state of Michigan during the last years 1.8. An interesting point is the lowness of fecundity among college graduates, possibly showing the effect of overpressure of school life: the average of two separate estimates is 1.6, while the relatives and friends of the members of one of these groups (thus of the same social class) give an average fertility of 2.1. English college women correspond very closely, with an average of 1.53 children to the marriage. Compare the figures for American women during the period from 1600 to 1750: each marriage then produced an average of at least six children; at the beginning of the present century this number was reduced to 4.5. As the tables from which the first result is computed include only those children that reached maturity, we may conclude that Benjamin Franklin's estimate (though not based on actual figures) that "one and all considered, each married couple in this country produced eight children" was about correct. The highest fecundity of the present day is 9.2, shown by the French Canadians.

Divorce has increased in the United States, from 1876 to 1886, 72.5 per cent. and the census of 1890 shows a ratio of 540 divorces to every 100,000 married couples. Other countries vary from 195 in Switzerland and 80 in France to 1.6 in Canada. According to the Reverend Samuel W. Dike there was in Rhode Island in 1898 one divorce to every 8.2 marriages or a proportion of 12,500 to 100,000 and for Massachusetts in the same year one divorce in 18.7 marriages. Throughout the country the percentage of divorce to all marriages is 0.54; it is 0.61 among native Americans, 0.5 among Americans of foreign parentage, 0.3 among foreigners and 0.67 among negroes. Thus in each of the different classes these figures vary directly as those for sterility and indirectly as those for fecundity.

It appears, therefore, that the causes of this excessive increase of sterility and its concomitants are both moral and physical. The frequency of relative sterility and decrease of fecundity as luxury, and comfort increase, point strongly to causes other than uterine disease. The causes of divorce we know to be moral and the fact that the figures relative to divorce vary for the different classes so closely in accord with the figures relative to sterility, fecundity and miscarriage argues a prevailing cause, and that of a moral nature, for all these allied conditions. Moreover, it is inconceivable that so many physical causes incapable of remedy should exist; in fact, were the causes such we should expect a diminution of sterility with the modern advances in gynæcology, analogous to the prolongation of life that has resulted from the progress in general medicine and surgery. It seems to us, however, that in these conclusions somewhat too little allowance is made for the mere decrease of vitality that follows upon civilization and refinement, entirely aside from the deterioration of the moral sense due to these factors; for, whereas medical skill has prolonged the average length of life among highly civilized nations, such nations nevertheless compare poorly in physical vigor with those living under more natural conditions and it is fair to assume that they would suffer in fecundity as well.

At all events, it must be recognized that a certain proportion of marriages will be barren; but between the figures we have given and 2.5 per cent. (which, being the rate among the simple, healthy and hard-working people of Norway and the interior of Russia, may be considered the normal) there is a difference as disconcerting as astonishing, which surely demands the most careful considera-

tion. For the cases in which sterility is the result of physical causes, whether natural or the result of previous prevention of conception or induced miscarriages, much can be done in the present state of gynecological science. When we consider under what adverse physical conditions and after how many years of sterility impregnation may occur we should never discourage any woman who desires children, unless her condition is such as absolutely to preclude the possibility of pregnancy. In this connection, the writer refers to Dr. Brothers' valuable paper, reviewed in these columns a few months ago. Dr. Brothers considers that in one out of every five childless marriages the husband is sterile but Dr. Engelmann is inclined to make the estimate one in four. He goes even farther than Dr. Brothers and asserts that no woman should be treated for sterility until we have proved by an examination of the semen that the husband is not at fault. Possibly this is extreme but certainly no woman should be treated unless she present good and sufficient reason for sterility and no case should be pronounced hopeless without an examination of the husband; possibly if he be at fault he himself might be amenable to treatment, though it usually is difficult to convince a lord of creation that he can be the blame-worthy element in such a matter. Moreover, in treating the woman it must not be forgotten that, in the absence of local abnormalities, general conditions such as anæmia, depression, mental or physical, etc., may be responsible for the sterility. When all has been done in these ways there still remain—most important of all—the moral causes which only to a certain extent fall within the physician's province. He can, however, do much in pointing out the physical results and penalties of intentional sterility and miscarriage and may in many cases exercise a considerable influence from the moral point of view. To this influence of individual physicians upon individual patients we may look for a much greater real result, however small it be, than we may expect from general considerations of national welfare or from such schemes as are being devised by French statesmen.

A. D. C.