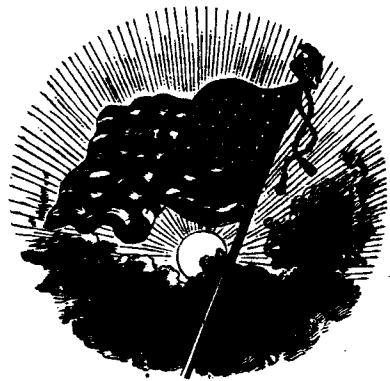


THE  
ATLANTIC MONTHLY.

A MAGAZINE OF

*Literature, Science, Art, and Politics.*

VOLUME XXV.



BOSTON:  
FIELDS, OSGOOD, & CO.  
1870.

a gruff, good-hearted, mischievous brother, — as well as a staid, sensible papa, a silly, sickly mamma, and an old-time grandmother. In this family Polly makes herself ever so lovely and useful, so that all adore her, though her clothes are not of the latest fashion, nor her ideas, nor her principles; and by and by, after six years, when she returns again to the city to give music-lessons and send her brother to college, Mr. Shaw fails, and the heartlessness of fashionable life, which his children had begun to suspect, is plain to them, and Tom's modish *fiancée* jilts him, and Polly marries him, and Fanny Shaw gets the good and rich and elegant Sydney, who never cared for her money, and did not make love to her till she was poor. That is about all; and as none of these people or their doings are strange or remarkable, we rather wonder where the power of the story lies. There's some humor in it, and as little pathos as possible, and a great deal of good sense, but also some poor writing, and some bad grammar. One enjoys the simple tone, the unsentimentalized facts of common experience, and the truthfulness of many of the pictures of manners and persons. Besides, people always like to read of kindly self-sacrifice, and sweetness, and purity, and naturalness; and this is what Polly is, and what her character teaches in a friendly and unobtrusive way to everybody about her. The story thus mirrors the reader's good-will in her well-doing, and that is perhaps what, more than any other thing, makes it so charming and comfortable; but if it is not, pleasing the little book remains nevertheless; and nobody can be the worse for it. Perhaps it is late to observe that the scene of the story is in Boston; at least, the locality is euphuistically described as "the most conceited city in New England"; and we suppose Springfield will not dispute the distinction with us.

*Hereditary Genius.* An Inquiry into its Laws and Consequences. By FRANCIS GALTON, F. R. S. New York: D. Appleton & Co. 1870.

THIS interesting and well-digested treatise opens with a concession which seems to us quite needless. Mr. Galton hastens to admit that his views concerning the transmissibility of genius by inheritance are "in contradiction to general opinion." We

believe, on the other hand, that the crudely formed opinions of the general public are quite as often to be found on Mr. Galton's side as on the opposite. Uneducated people always expect to see children resemble their parents; and to such an extent is the theory carried, that if a dissipated man dies leaving a son, all the old cronies of the neighborhood will wag their heads and predict of the innocent boy that "he is going to be just like his father." Of every newborn child the question is asked, Which of his parents does he look like? and every peculiarity of character, temperament, or personal attitude, which he may manifest, is ingeniously traced by aunts, uncles, and admiring friends, to its ancestral sources. So true is this that when Mr. Buckle—a writer but little acquainted with biology, in spite of his vast pretensions—made bold to deny the transmissibility of mental and moral characteristics, he expressly recognized that he was running counter to a "popular prejudice."

In this case, however, popular prejudice is unequivocally supported by scientific investigation. The thoroughly educated biologist, or even the intelligent amateur student of the laws of life, is the last person who needs to read a treatise like Mr. Galton's in order to be convinced that children derive their mental capacities as well as their physical organizations from their parents. This point has been so often illustrated, and has been established by such overwhelming evidence, that if Mr. Galton had aimed at nothing more than a fresh demonstration of it, his book would hardly have had any *raison d'être*. Pure biological considerations, for instance, assure us that a man like Newton must have had parents of rare mental capacity, even though they have done nothing by which to be remembered in history: the son of ordinary parents could no more have discovered the law of gravitation than the offspring of a pair of cart-horses could win the Derby.

But Mr. Galton aims at something more than the illustration of this truism. He aims at illustrating the character and extent of the limitations under which the principle of heredity works; and here his contributions to our knowledge of the subject are both novel and important.

There is a great deal of loose thinking current, both as to the kind and degree of the innate differences of capacity between different men, and as to the mode in which

such differences are transmitted from parents to children. Upon both of these points Mr. Galton furnishes ingeniously arranged data for forming precise estimates. After a careful comparison of biographical dictionaries, etc., he arrives at the conclusion that one man in every four thousand becomes by his own exertions sufficiently distinguished to leave a name recorded in history; while about one man in every million leaves behind him an illustrious name. Then, by a curious calculation, the principles of which are familiar to the scientific student of statistics, but the details of which are too voluminous to be given here, he divides men into sixteen grades of natural ability, separated by equal intervals. The ascending grades are designated by capitals, the descending by lower-case letters. Thus *a* and *A* representing that mediocrity which may be found to characterize most provincial gatherings, *c*, for instance, would denote the class of decidedly silly persons, *e* would stand for those who are half-witted, *g* for those who are absolutely idiotic; while, on the other hand, *D* would include the mass of men who obtain the ordinary prizes of life, — about sixteen thousand in each million, — *F* represents the degree of eminence achieved by about two hundred and thirty-three men in each million, *G* that reached by fourteen in each million; and, finally, *X* includes the wide variety of grades above *G*, forming the class of men whose names are inseparably associated in history with the best achievements of the age in which they have lived. Thus the difference between extreme *X* and *x* represents the difference between Shakespeare and the most degraded idiot mentioned in medical literature; but generally about one man out of each million of adult males is entitled to rank somewhere in class *X*. To illustrate the actual differences in natural capacity between these grades, Mr. Galton cites the competitive examinations in mathematics which are held yearly at Cambridge. Of the four hundred students who take their degrees each year, — and who, on the whole, rank above mediocrity, say in class *B* or *C*, — one hundred regularly apply for mathematical honors. Of these about forty succeed in becoming “wranglers,” and even to be a low wrangler is considered no small honor, since it is a passport to a fellowship in some college. Now the differences in the number of marks obtained each year by these candidates for honors is at first sight astonishing. Let us remember

that they are all working to the utmost limit of their capacity, like barrow in a race, and that, in general, they have had about equally good opportunities for preparation. Well, the lowest man on the list regularly obtains less than three hundred marks; the lowest or fortieth wrangler obtains about fifteen hundred; the second wrangler obtains from four thousand to five thousand; while the first or senior wrangler does not fall short of seven thousand and sometimes reaches nine thousand five hundred. In the examinations for classical honors the figures are similar; and no better proof could be desired of the decided superiority of some men over others in point of natural ability. For, in spite of the popular prejudice, the young man who wins university honors must be several degrees above mediocrity. He may be an Adams or a Herschel, belonging to class *X*; but if, disappointing the sanguine expectations of his friends, he does not rise so high as this, he will at least be likely to obtain a place in class *E*, — to achieve as much as is achieved by two thousand four hundred and twenty-three men out of each million. And the difference between the “poll-man” who, from lack of ability, obtains no honors whatever, and the senior wrangler, will represent the difference between classes *B* and *C* on the one hand, and *E* or *F* on the other.

Now Mr. Galton, in his inquiry, deals only with the three highest classes, *F*, *G*, and *X*. His object is to estimate the probability that any member of one of these classes has had parents or will have children belonging to the same or to the adjacent class. And it is to this end that he has compiled his very interesting, though by no means exhaustive, series of statistical tables.

In discussing this point we must observe, first, that an illustrious man (of class *X*) is much more likely to have had eminent parents than to have eminent children. To produce a Pericles, excellent parents are absolutely essential; but a Pericles often produces nothing better than a Paralos and a Xanthippos. This is the fact which so often puzzles those who would trace the workings of heredity among men of genius. Yet biology supplies three adequate foundations upon which to build a complete explanation of it. In the first place, the sons of great geniuses are likely to be excessively precocious. Now excessive precocity indicates that the brain is increasing in complexity of structure faster than it increases in mass and weight.

In other words, it *develops* faster than it *grows*; and it is a law of biology that *development is antagonistic to growth*; the force used up in the one process is not available for the other. Consequently the excessively precocious sons of geniuses are likely either to die young from local over-nutrition of the nervous system, or else to stop short in mid-career from defective brain-growth due to excessive brain-development. In the second place, "genius" is not a simple but a very complex phenomenon. To obtain a place high up in class *X*, a man needs a rare combination of intellectual, moral, and physical qualifications. He must have vivid imagination, unusual power of concentrating his attention, inflexible determination, and prodigious capacity for work, for the triumphs of "genius" are not to be won without prolonged labor. Now if a man possess all these qualities, gained by the addition of the various good qualities possessed by his able though not illustrious parents, it is not likely that he will transmit them all unimpaired to his children. His son may possess them all save the vivid imagination, in which case he will be perhaps an excellent routine-worker instead of a genius, or he may inherit all save the rare capacity for continuous work, in which case he will be a brilliant performer of trifles. But since the mother, although a sensible woman (say of class *C* or *D*), will almost inevitably fall very far short of the father, the chances are that the son will miss some essential quality, and will fall into class *E* or *F*; in which case his achievements, however creditable, will appear very meagre compared with those of his father.

But the third and chief reason why the sons of great geniuses should be inferior to their fathers is to be found in the law of biology, that *individuation is antagonistic to reproduction*. That is to say, "the attainment of the highest possible individual excellence is incompatible with the highest possible manifestation of the reproductive function." This law holds throughout the vegetable and animal kingdoms. In some lower organisms, the birth of offspring is the signal for the death of the parent; reproduction completely checks individuation. The prime functions of the organism are three, — nutrition, nerve-action, and reproduction. Now in a man of extraordinary genius (high up in class *X*) nutrition and nerve-action are likely to consume the force of the organism, so that little is left for

reproduction. What is spent in one direction must be hoarded in the other. To produce a child of rare mental vigor requires a liberal outlay of phosphorus compounds. But in the man of class *X* these compounds are liable to be completely absorbed in the support of the brain. Hence, of the twenty or thirty greatest men who have lived, one at least (Newton) has been rendered impotent by excessive brain-action, many have remained unmarried, and only two or three have produced sons above mediocrity.

These considerations are more than sufficient to account for the often noticed inferiority of the sons of great men. We can no more produce a whole race of Newtons and Shakespeares than we can produce perpetual motion: the principle involved is the same in both cases. A Nicholas Bacon may produce a Francis Bacon, a Bernardo Tasso a Torquato, a Philip an Alexander, but the culminating genius of the family is likely to be the last. We do not mean to imply that it is necessarily so. Sebastian Bach had twenty children, of whom three are immortal composers, while the other seventeen were professional musicians. But when genius ends in sterility or mediocrity, as is so often the case, the physiologist has ample means of accounting for the phenomenon.

In spite of all the drawbacks here enumerated, and concerning which Mr. Galton says but little, more than half of the celebrated men of history have had celebrated kindred. The fact is abundantly proved and illustrated in Mr. Galton's very interesting tables, which exhibit extensive and careful research, though we notice in them several serious omissions. Mr. Galton gives us Pepin Heristal, Karl Martel, Pepin the Short, and Charlemagne; why should he not have added that Louis IX. was grandson of Philip Augustus, and grandfather of Philip the Fair? Why has he omitted the long line of hero-kings who governed England from Egbert to Edmund Ironside? Why has he failed to notice the large percentage of varied ability combined with unequalled personal beauty among the royal descendants of William the Conqueror, down to Richard III.? And why is he silent about the Roman Emperors of the house of Hohenstaufen, a family in which each generation seemed to outdo the preceding one, until the climax was reached in Frederic II.? Besides these omissions, we notice a few inaccuracies. Cardinal Richelieu is said to have been minister under

Louis XIV. On pp. 173 and 190, Jane Austen, the novelist, is confounded with Sarah, the talented wife of John Austin. On p. 216, Humboldt is said to have finished his "Kosmos" set. 82; he died, set. 89, without having quite finished it.

Mr. Galton concludes with some interesting reflections on the comparative natural abilities of different races. We think he is here misled by the assumption that the variations of ability are equal in different races. Thus he concludes that the *A* of the negro race corresponds to our *c*, because Toussaint l'Ouverture, the only *X* of that race, answers to our *F*. He forgets that the negro race has produced but one Toussaint l'Ouverture, while the Aryan race produces *X*'s at the rate of one in each million of adult males. Taking this fact into the account, the negro average will be found to correspond to our *d*. With reference to the Athenians as compared with the English race, Mr. Galton falls into a more pronounced error. From the fact that Athens, with an average population of about twenty thousand native adult males, produced fourteen *X*'s in one century, he concludes that the Athenian *A* corresponded to our *C*, so that the Athenians surpassed us even as we surpass the negroes! This result astonishes Mr. Galton himself, and is no doubt preposterous. In the first place the classical scholar will dispute four of his *X*'s, namely, Miltiades, Aristides, Kimon, and Xenophon. This would materially alter the result; but a far more fundamental objection remains. England, according to Mr. Galton, regularly possesses six contemporaries who will rank in class *X*. We grant this, and for the sake of clearness name the present six: Spencer, Mill, Darwin, Maine, Browning, and George Eliot. Now, if the Athenian race surpassed ours even as we surpass the negroes, there ought to have been 1355 Athenians living between 530 and 430 B. C., equal in ability to the six persons just named. This, of course, lands us in an absurdity; the entire annals of the human race will barely furnish 400 names as illustrious as those which we have taken for examples.

The wonderful fertility of Athens in great men cannot be explained on physiological grounds alone. Historical, or, rather, sociological factors were at work in causing this anomalous manifestation of genius, and Mr. Galton's is only one of the many cases in which biologists have erred by trying to

explain too much with the ~~theoretical~~ furnished by their own science. We freely admit a slight superiority of the Athenian race over our own. The causes of it lie to a certain extent within the ken of the historical inquirer, but we have not space to examine them here, or to do further justice to Mr. Galton's excellent book, save by advising our readers to study it carefully. It raises many important questions, the solution of which affords a good opportunity for sharpening one's wits and extending one's researches.

*Hedged In.* By ELIZABETH STUART PHELPS, Author of "The Gates Ajar," etc. Boston: Fields, Osgood, & Co.

"THE book is a poem," said a friend of ours, on closing this volume. The criticism gives in a nutshell our first impression of the story as a work of art. Its two leading characters, Nixy and Mrs. Purcell, are ideal women. Neither can be fairly said to represent a class. The one is not a fit inmate of a Magdalen asylum, nor is the other a specimen of the average Christian woman, as the Christian world goes. Yet exception to the make of the story on this account would be unjust. Its great charm is its fidelity to the best possibilities of character. We doubt whether literary art can do much that is worth doing, on any other principle, to adjust the relations of fallen to unfallen womanhood. Any such work should be constructed on a profound faith in humanity, reaching out in both directions; to the fallen, conceiving what they *may* be; to the pure, what they *ought* to be. In this idealizing of the two characters most difficult of representation in any natural womanly relations to each other, Miss Phelps has certainly achieved a rare success.

The subordinate personages also are most of them drawn with a singular blending of delicacy and power. Mrs. Myrtle, Jacques, the French fiddler, the Scotch landlady, Moll, Dick, and "No 23," are all clear-cut and true. In versatility and in literary finish, the book is far in advance of "The Gates Ajar"; and in power it exceeds anything else which the author has written.

The morality of "Hedged In," like that of almost everything which Miss Phelps has published, is intense and intensely Christian. One may think what one pleases of her conception of religious faith, but there can be no doubt that she is keenly in car-