BIRTH-MONTHS OF GENIUS

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I

THE influence of season upon the human embryo, in so far as concerns the mental and moral traits of the after-born individual, is something which appears to have received scant attention at the hands of science. It should readily suggest itself that of the numerous peculiarities of mind and body for which no explanation can be found in the family strain no few might trace back to climatic influence upon the germ. From this quarter also, in some measure at least, may flow the variations in temperament among children of the same parents born and reared under similar conditions, nor is it impossible that the tendencies in mature men and women which lapse so easily into insanity, and lesser psychological and even physical derangements, spring in some part from like causes.

In this department of speculation there is little which can serve as a guide to the student either in theory or experiment. Yet the subject is of manifest importance to humanity. Nor is it without a bearing in other directions. If climate and season leave an impress worthy of consideration it is scarcely to be supposed that this impress would be limited to mankind, so that in animal husbandry, where breeding for intelligence is an object, no less than in the field of human race-culture, where that end is always in view, the influences of climate and season may play no mean parts.

II

As a possible factor in the determination of sex the effect of heat and cold has been considered. Thus, in Geddes and Thomson upon *The Evolution of Sex* it is said: "In the human species Düsing and others have noted that more males are born during the

cold months; and Schlechter has reached the same results from observations upon horses. The temperature of the time not of birth but of sex determination is, however, more important; nor must it be forgotten that temperature may have many indirect and subtle influences."

In its larger aspects the subject has rested equally in conjecture. Weismann, in his work upon *The Germ Plasm* appears to concede an importance to the influence of season. In the discussion of climatic variations in butterflies he takes kindly to the suggestion that such variations may be due to modifications induced by climatic differences, and adds: "In many other animals and plants the influence of temperature and environment may very possibly produce permanent hereditary variations in a similar manner; but it is difficult—in fact almost impossible—to identify such cases with anything like certainty from the observations which have heretofore been made."

Even as late as 1922, when the splendid *Outline of Science,* edited by Professor J. Arthur Thomson, appeared, only the slenderest progress had been made toward a solution of this problem, although its scientific importance is clearly recognized: "If we probe a little deeper"—we quote from volume 2, page 378—"we see the possibility that stimuli of outside changes, e.g., of climate, may saturate through the organism and provoke the complex germ-cells to change. Thus, Professor W. L. Tower subjected potato beetles at a certain stage of their development to very unusual conditions of temperature and humidity. The beetles themselves were not changed, for these hard-shelled creatures do not lend themselves to external modifications. But in a number of cases the offspring of the beetles showed remarkable changes, e.g. in color and markings, and the offspring of these variants did not revert to the grand-parental type. In such a case it looks as if an environmental stimulus penetrating through the body serves as the liberator or stimulus of variability in the germ-cells."

III

The domain which science has thus neglected, the imagination of mankind in all ages has filled with illusions of its own. It is to the gifts of the fays in the birth-hour, coming from the innerland where dwell the lovely shades of things, that we owe the talents and tendencies that make us admired and loved—so we all believed

in our fairy-book days. On the other hand, as we grew older, the larger belief in an astral influence, raining down from the heavens, seized and stirred the imagination. This fancy of an earlier day was once a universally accepted belief, and not only poets such as Chaucer and Shakespeare and Milton, but astronomers such as Kepler and Brahe, and great commanders like Napoleon and Wallenstein, read in the stars the destiny of men and nations. Even yet the horoscope is a popular feature of many journals and magazines, attesting the hold upon our imagination of this inheritance from a vanished age.

Nor is it possible to deny that in the mystical literature of the subject coming down from the ages we are startled, now and then, by analyses of character according to birth-months which, as mere guesses, seem remarkably happy. That the constellations rule our lives can no longer be believed, but that a seasonal influence, wrongly attributed to the stars in the past, may tend to mold character and determine bent of mind, is not thoughtlessly to be flouted. Such a theory might explain much in the apparent predictions of astrology which challenged the respect and even the belief of great minds in the past.

In his *Man of Genius* Lombroso has not disdained to study the influence of season upon creative genius and has elaborately compiled from biography the most productive months for the various orders of talent. "It is evident," he concludes, "that the first warm months distinctly predominate in the creations of genius as well as in organic nature although the question can not be absolutely resolved on account of the scarcity of data as regards both quantity and quality." Lombroso, indeed, pushes his inquiry in directions which verge somewhat toward the subject we have in hand. Dealing with the sensitiveness of men of genius to barometrical conditions, he enumerates geniuses who loved heat and found the richest outflowering of their talents in the same stimulus to which nature so gloriously responds in field and garden, and he submits an interesting table of favorite months for the various orders of genius. The most favorable month for esthetic creations, he tells us, is May; then come September and April, the least favorable being represented by the months of February, October and December. The same may be observed, he adds, with astronomic discoveries, but here April and July predominate, while for physical discoveries,

as for esthetic creations, the months of May, April and September stand first. The advantage, he concludes, belongs to the months of early warmth rather than those of great heat, and in the same way the months of great barometric variation have an advantage over very hot and very cold months.

A study of the birth-months of eminent individuals is by no means the absurd thing it might seem on its face to be. So much has superstition through all history centered about birthdays that it is hard to adjust ourselves to the thought of a sober inquiry upon such a subject. Difficult as such an investigation is, however, and wearisome as may be the task of gathering adequate data, the effort is well worth while. We have only to shift the quest from the influences prevailing at birth to those prevailing at the beginning of life, and at critical periods of the panorama of unfoldment before birth, in order to take the subject out of the realm of fancy and into the realm of science.

"What lies beyond our reach at present, as Driesch has very ably urged," remarks Edmund B. Wilson in his work, *The Cell in Development and Inheritance*, page 432, "is to explain the orderly rhythm of development—the co-ordinating power that guides development to its pre-destined end. We are logically compelled to refer this power to the inherent organization of the germ, but we neither know nor can we even conceive what that organization is . . . . . We know no more how the organization of the germ-cell involves the properties of the adult body than we know how the properties of hydrogen and oxygen involve those of water." Our ignorance is not as abysmal, indeed, as when Wilson wrote, and the process of discovery has given us an inkling of the method nature pursues in accomplishing her great ends, but the ultimate mystery is the same as when the work of Wilson appeared.

IV

In our earlier studies *Fertility and Genius, Genius and Stature, Physiognomy and Genius* and *Hair Color and Genius*, as published in the *Popular Science Monthly* for November, 1907, December, 1910, February, 1911, and September, 1912, *Longevity and Genius* as published in the *Open Court* for December, 1920, and *Heredity and Genius*, as published in the *South Atlantic Quarterly* for April, 1924, we were clearly within the limits of legitimate scientific in-

quiry. The present study, we are persuaded, does not trespass on forbidden ground.

It is true that when the first results of our inquiry appeared in the *Scientific American* for August 2, 1913, the publication marked an entry into what seemed a grotesque field. Other workers had labored with statistical studies of genius but all before appeared to shun a domain resigned to fortune-tellers and mountebanks. Since that time, however, an occasional nod of recognition in eminently respectable quarters has given the subject a standing to which otherwise it could scarcely have aspired.

In *Nature* for July 8, 1922, (Vol. 110, page 40), F. J. Allen of Cambridge, England, has spoken a brief word upon "seasonal incidence in the births of eminent people," while page 218 of the same volume of that scientific journal, under date of February 16, 1922, carries a note upon "birth days in relation to intelligence" from a discussion of the annual incidence of intelligence by Mr. M'Callum Fairgrieve before the Royal Society of Edinburgh.

In order to find, if possible, the causes underlying the production of eminent intellects at certain periods Mr. Allen collected statistics of dates of birth of more than two hundred eminent persons, and an analysis of the dates showed that the greater number were born in the colder months, February being distinctly the most prolific with December next in importance and August and June as the most productive during the warm months, and the author of this communication explains that he could find no correspondence between the distribution of general birth-months and the distribution of births of eminent persons.

It is of course apparent, as Allen clearly recognized, that the statistics of infant mortality may have a decided bearing on the question. The distribution of birth-months for the ordinary population can have no connection with the distribution of birth-months for genius where infant mortality enters as an important factor into the problem. If children born at one season of the year are subject to a high mortality they are forever lost to the ranks of genius, however favorable their heredity or the auspices ruling when their being commenced, while those born in the more favorable seasons live to swell the pages of biographical dictionaries.

Grieve, it appears, in order to determine whether the season of birth bore any relation to intelligence, experimented with 368 boys,

using chiefly the American army tests, supplemented by some of the tests used by Dr. Cyril Burt, and found that the boys born in the late spring were less intelligent than those born about October, and Grieve suggested that a test in other districts would be valuable and that the entire problem is deserving of systematic investigation.

V

The only pretentious study that has yet appeared—so far at least as our search has disclosed—is the discussion by Alleyne Ireland in *Hearst's International* for May, 1925, under the popular title of *The Month of Your Son's Birth.* On the basis of names in the *Hall of Fame for Great Americans* he found the distribution of birth-months as follows: January 5, February 12, March 3, April 7, May 6, June 2, July 6, August 3, September 5, October 4, November 3, December 5. Ireland, it appears, then made use of a list of 10,181 names selected by himself from a dictionary of international biography and by eliminating the mediocre, whose presence among the eminent came merely from royal or official station, he arrived at 2,650 names, analysis of which yielded 382 names for February as against an average of 206 names for each of the other eleven months of the year, with a low point of 149 for June.

Ireland then inquired into the distribution of births for the general population and on the basis of figures dealing with 21,695,646 births in Europe and America determined that February had fewer births than January, March, April, May and September, about the same number as August and October, and more than June, July, October and December.

Setting against the data for the birth-months of genius the "breeding months," or months of the commencement of life, Ireland arrives at April breedings for the January births, May breedings for the February births, and so on, and from the curves plotted in a diagram and published with the article it appears that for most of the year the figures for genius-breedings follow quite closely the general breedings, but between April and May and May and June the general breedings go down 1.4 per cent while genius-breedings go up 55.5 per cent, and between May and June the general breedings go up 8.4 per cent while genius-breedings go down 36.1 per cent.

Ireland, as the immediate result of his compilation, reaches the conclusion that the figures signify nothing and that the large-place of February among the birth-months of genius means no more

than that "May, when all nature renews itself, is the natural breeding-month," so that his "puzzle was no puzzle at all," and that probably mother nature was smiling indulgently upon him as he plodded through his exhaustive figures.

Ireland does not give his authority for the birth-months of the 21,695,646 individuals in Europe and the United States The present writer has found extreme difficulty in getting together dependable data upon the subject. Nor does it appear that Ireland made any effort to classify the birth-months of the general population according to geographical location. His original list, moreover, of the world's distinguished names, aggregating 10,181, and reduced by elimination to 2,650 appears to have been gathered, not by scientific methods, but from his own knowledge merely of history and geography, carrying, as with us all, predilections born of individual taste and reading. Finally, the element of infant mortality, with the differing rates in different seasons and different regions, appears not to have been considered, so far at least as is disclosed by the paper itself.

VI

The first step in a statistical investigation of this character is a catalogue of names assembled by careful methods and sufficiently extensive for use. In our own inquiries we have employed, where practicable, as appears from earlier papers, Dr. J. McKeen Cattell's tables, as published in the *Popular Science Monthly* for February, 1903, comprising the world's thousand most eminent men and women. The painstaking process by which these names were gathered, as described in the same issue of that magazine, is a proof alike of the importance of such a list and of the difficulties that surround its formulation. That no single mind, from its own resources and by subjective methods alone, is adequate to the compilation of such a catalogue becomes more than plain in the light of the discussion by Cattell. It is true that even these tables are the subject of criticism by Havelock Ellis in his magnificent *Study of British Genius,* but in default of any other existing list, world-wide in its scope, we have used Professor Cattell's thousand names in our studies, and the results, as we conceive, sufficiently attest their value and dependability for our purposes.

As affording, therefore, some basis for a study of the influence of season in the pre-natal hour, not only upon the moral and intel-

lectual but upon the physical being of the individual as well, we have investigated the birth-months of the world's thousand most famous men and women, using Professor Cattell's catalogue of names, and the results we have tabulated according to months. Of the thousand individuals the information sought was obtainable as to 431 from the authorities at our command, and of these 45 were born in January, 40 in February, 34 in March, 36 in April, 38 in May, 26 in June, 29 in July, 34 in August, 36 in September, 36 in October, 41 in November and 36 in December.

A marked falling off in number of births is apparent during the months of June and July, with the earlier months showing a higher average than the closing months of the year. Much the same variation, however, would seem to obtain in case of births at large. According to *Mulhall's Dictionary of Statistics*, fourth edition, page 92, the birth-averages by months for Europe, on the basis of a total for the year of 1200, are as follows: January 107, February 107, March 107, April 103, May 99, June 94, July 93, August 95, September 101, October 99, November 97, December 98.

Alleyne Ireland, as we have seen in an earlier portion of this paper, found as the outcome of a laborious investigation that "genius-births" were peculiar to February and so were related to May, the "natural breeding month," thus resolving the seeming mystery of the second month in the year as the favorite month for the appearance of genius. The table we have given, however, based upon the figures of a great statistician, and the results of our own inquiry with Professor Cattell's carefully assembled catalogue of names, shows the justice of the criticism we have ventured to offer against Ireland's methods and his results. The month of May, Ireland's "natural breeding month," makes a poor showing both in Mulhall's figures and ours, occupying, with December, the lowest place in our figures and, except March and April, the lowest place in Mulhall's. It is evident that the larger lists of names which Ireland used were faultily gathered and that he stopped in his inquiry too soon. Our tables and Mulhall's are consistent with each other, though arrived at by different means, and are more nearly in accord with actual human experience. Thus, the low months for the beginning of life in our data and Mulhall's are, as is apparent, March, April and May—the spring season in southern latitudes and when nature begins to awaken even in the more northerly

climes,—while October, November and December are the highest "breeding months" in Mulhall's figures, and October the highest breeding month for genius in our figures, with November among the next highest, and only December falling to a low point in contrast with Mulhall's December.

In our figures and those of Mulhall alike we fail to sense the supposed popularity of Easter through the centuries as the marriage-time. Christmas also, a favorite time, according to tradition, for the nuptial ceremony, leaves its trace rather faintly in Mulhall's list and even less markedly in ours. May, which notwithstanding its place in Ireland's figures as the "natural breeding month," has never been a favorite time for marriages, shows pronouncedly its historic unpopularity for that rite both in our data and Mulhall's. October, however, the after-harvest month, when the agricultural laborer in Europe counts his earnings and thinks of wedded bliss, emerges as the chief breeding month for genius and the general population alike.

The leading birth-months for royalty in Cattell's thousand names are February and September, which may indicate that Whitsuntide and Christmas are often chosen by monarchical houses for the marriage of their sons and daughters, but a larger proportion of births appears in June and July for rulers than for other ranks, betokening, perhaps, a greater independence of the festive seasons for the wedding rite than is true of other classes.

Viewed broadly our studies thus far seem to demonstrate that for genius as a whole there are no favorite birth-months, since the genius of the world seeks much the same month for the beginning of life as the ordinary population. In so far, too, as concerns genius at large, as reflected in Cattell's tables, the factor of infant mortality seems not to count for much, since had the contrary been the case a larger variation would have appeared between the figures for genius in our data and the figures for the ordinary population in Mulhall's. For genius, therefore, distributed over the world and throughout all historic periods, and for the general population of all Europe in our own day, the birth-months would seem to be much the same.

VII

A classification of birth-months in our list, however, by nationality shows startling variations from the general average. The

favorite birth-month, it appears, for American genius is January, with more than twenty-four percent of the total, and with April and May following in order, and February as the fourth highest with something over twelve per cent, the remaining months for Americans being almost negligible. For English genius, on the other hand, according to our tables, October is the striking month, with twelve percent, followed by November and December with something over ten percent, and March, April and February, in the order named, as the next highest. For French genius, as for American genius, January heads the list with something over eleven per cent, followed by September, August, April, May and June. German genius seeks predominantly the month of December, with May, January, February and November next in order, while Italian genius exalts the month of March with more than seventeen per cent, followed by September with fifteen per cent and June and July with over eleven per cent.

In considering these statistics, it is to be recalled that we are dealing with 431 names only out of Cattell's thousand, and due allowance for this circumstance must be made. The accidental factors may make their presence felt in a restricted catalogue of names when the contrary would be the case with a larger number. Sundry aspects of these tables suggest, nonetheless, that though actually based upon something less than half the distinguished personages in Cattell's catalogue the results would not be different if the classification could be extended to the entire list. It is chiefly, in fact, as to the genius of the earliest periods that the birth-months are wanting. As to the genius of more recent times our data is full.

It is worthy of remark that in the case of each nationality dealt with in our figures the high birth-months tend to gather into definite periods, which is precisely what we might expect upon the basis of seasonal incidence and climatic influence. Thus, for American genius the emphasis falls upon the first five months of the year. English genius spans from November to April, French genius selects the period from April to September, except that in the case of French genius, as in the case of American genius, the peak is represented by January, which stands alone in the latter case and apart from the general period of the year favorable for birth-months of French genius. German genius bridges from November to May, Italian genius favors the general period from July to Sep-

tember, with the month of March in that case standing off by itself and supplying the highest figure. With the marked proclivity of birth-months for the varying nationalities to seek special periods of the year we seem to approach the domain of law rather than the region of accident and chance.

A comparison of Mulhall's tables for the birth-months of the ordinary population in Europe, arranged by nationality, with our tables for genius birth-months, shows wide divergencies between the two. Mulhall's averages for birth-months of the general population in Europe, referred to in earlier portions of this paper, do not vary greatly, as we have seen, from the averages for genius at large—excluding America always which is not embraced in Mulhall's figures—and when Mulhall's tables are consulted for birth-months of the general population covering the various nationalities from which his averages are deduced, we find that while the birth-months for the general population in the various countries tend toward a uniform figure throughout the year genius birth-months, by contrast, show pronounced divergencies.

If we may safely rely upon our tables of genius birth-months, as seems true, then by offsetting these tables against Mulhall's tabulations for the general population we see a distinct tendency for genius-births to gather into different periods from the ordinary population. If, for example, we adopt Mulhall's figures for Scotland as serving equally for England, the births for the general population are at low ebb from March to July, with a reduced rate from July to January, and with the lowest point in February, whereas English genius appears to seek its birth-months chiefly in October, November and December, with March following closely, August, September and April next and after February the birth-months for genius falling to their lowest point in January, May, June and July. In the case of France the general population, according to Mulhall, has its favorite birth-months in February and March with January and April next, followed by May, July, August and November, and with December, October and June making up the low points, whereas French genius in our tables haunts February and March for its highest birth-months followed by January and April, with May, July, August, September and November next, and June, October and December least in favor. Germany, according to Mulhall, prefers January, February, March and Septem-

ber as the birth-months for its ordinary population, with the remainder of the year showing lower figures, excluding September, and with June reaching the low point for the year, whereas German genius, in our tables, chooses January, February, March and September as the highest birth-months, with April, May, July, August, October, November and December next, and June showing the lowest point. The ordinary population in Italy is born chiefly in February, with March close after, followed by January and April, the last four months of the year next, succeeded by June and August and with July displaying the lowest number. Italian genius, on the other hand, while selecting March as its highest month, which is likewise one of the higher months for the ordinary population, chooses next the month of September, which is one of the lower months for the ordinary population, followed by June and July, which are among the lowest months for the general population, and succeeded by February, which is the highest month for the ordinary population, after which come the months of May, August and November, then January, and with the lowest months April, October and December, which are fairly good months for the ordinary population.

VIII

In so far as concerns America we have seen that more than 24% of American genius-births in our data gather into the month of January, with April and May following and February ranking as fourth highest with something over 12%, and the remaining months of the year scarcely represented. A comparison of these figures with the general birth-statistics for continental United States is highly interesting and suggestive. Out of a total of 1,878,880 in continental United States, according to *Birth, Still-birth and Infant Mortality Statistics for the Birth-Registration Area of the United States, 1925,* issued by the Census Bureau, 161,145 occurred in January, 151,173 in February, 168,416 in March, 157,320 in April, 160,415 in May, 156,565 in June, 163,638 in July, 162,957 in August, 154,602 in September, 153,870 in October, 143,676 in November, 145,103 in December.

It is plain that the birth-statistics of the general population for continental United States, according to the census report in quesion, and the birth statistics of the general population of Europe, according to Mulhall, follow divergent lines. The highest month for

continental United States is March, with July and August next in the order named, followed by January and May, and which in turn are succeeded by April, June, September, October and February, in slowly decreasing proportions, and with November and December displaying low figures as marked as the high figure for March. In Mulhall's table for Europe, as we have seen, the first three months of the year are the highest, with April next, followed by September, May, October, December and November, and with June, July and August showing the lowest figures.

Whether the variations in the statistics for the United States and Europe are attributable to accidental factors, springing, for example, from inadequate data employed by Mulhall for his averages, the present writer is unable to determine, the publications of the *International Institute of Statistics* upon the subject not being available for his use, but the close parallel between his own figures for genius-births and Mulhall's figures for the general births in Europe might suggest the accuracy of Mulhall's calculations.

Since the dependability of the data for continental United States as published by the Census Bureau cannot be questioned, and as genius birth-months in the same area according to our data show a wide divergence from those figures, with a remarkable emphasis upon January as the favorite birth-month for American genius, it would follow that American genius seeks the month of April in predominant degree for the beginning of life. This is not far from the month of May—the "natural breeding month" arrived at by Ireland—nor the month of June to which the statistics for continental United States would point as the chief breeding month for the population at large, and indeed the high figures in Mulhall's tables for January, February and March would throw the breeding-months for the general population of Europe into the same general period, leaving the breeding-months for the separate nationalities of Europe to be determined from exact data and set off against the widely varying figures in our tables for European genius.

While the "natural breeding-month" does plainly evidence itself in the computations for American genius and for genius at large and for the general populations likewise of America and Europe, as might have been expected, the significance of the figures for American genius as contrasted with the figures for the general population of continental United States—where alone exhaustive

data is available—is manifest. March, the highest birth-month for the general population, occupies a low place in the table for American genius, and June and July rise to imposing heights as against the unfavorable aspect of those months in the statistics for American genius, as indeed for genius at large.

Whether the large place of January in our tables may be due to the comparatively small number of names for America present in Cattell's lists—thirty-one only—is a question which immediately suggests itself. Conceivably, too, the present day distribution of general birth-months may be different from distributions prevailing during the historic American period, when the leading names in American biography rose to note, or there may be regional variations in distribution, so that the figures for New England, for example, from which so many names in American biography are derived, might be deceptive if these figures differed widely from the figures for the great western areas of the United States, which have only lately begun their contributions to the honor-roll of American names.

As to variations in distribution throughout the American historic period the present writer is without dependable data, but for regional variations in our own day, the census report heretofore mentioned discloses no basis. From table 1, to be found at page 62 of the report in question, it appears that the distribution for states as widely separated as California and Connecticut, with their markedly different climates, follows much the same trend as the figures for the general population in the continental area of the United States.

Assuming no material variation in the distribution of the general birth-months throughout the American historic period, and waiving aside as probably untenable the idea of a regional variation in this country, the discussion as to America narrows down to the inquiry whether the highplace of January for birth-months of genius in America, according to the limited number of names involved in Cattell's list, is an illusion or an actuality.

A list of names for America alone, sufficiently large for study and carefully selected by such methods as Cattell pursued in compiling his thousand names does not exist, so far as the present writer is aware, but inquiry according to chance lists of names, found here and yonder, seems to confirm the large place of that month in the production of American genius. Using, for example,

the names in the *American Statesmen Series*, edited by Jas. T. Morse, Jr., we find the birth-months in those instances to center in January to the extent of one-fourth of the twenty-eight names. Employing *Outline History of English and American Literature*, by Charles F. Johnson, published by *American Book Co.*, in 1900, which the writer happened to come upon in his own library, and tracing out the birth-months of the 32 American literary celebrities dealt with by the author, the names, where the birth-months were given by the *Century Dictionary and Encyclopedia*, fall again, to the extent of one-fourth the number, in the first month of the year.

Who's Who in America, currently used by some workers in this field, is unadapted to our purpose. A little reflection will serve to make clear that only the smallest sprinkling of true genius could possibly be found among the names contained in that dictionary of contemporary biography. If, in Cattell's scientifically selected catalogue of names, published as lately as 1903, and comprehending the genius of the entire world for all time, so small a number of names could be found representative of America, it would be idle to expect more than a very few for a single generation among the twenty-five thousand contained in *Who's Who*. The individuals in that work, for the purpose at any rate of our present inquiry, must be ranked with the ordinary population. That this is true appears from a test of our problem by the names under the first letter of the alphabet in the 1924-5 edition. The 727 names in connection with which the birth-months appeared, are distributed over the calendar as follows: January 55, February 58, March 60, April 71, May 50, June 47, July 70, August 70, September 60, October 70, November 58, December 58. It is apparent that this closely parallels the distribution of birth-months for the ordinary population as disclosed by the report of the Census Bureau to which we have several times referred, and the results are in striking contrast with the results for the shorter lists of specially distinguished personages in American history which we have used.

IX

More than once in this discussion we have had occasion to refer to infant mortality as having a distinct bearing upon our subject and in view of the wide diversity in the seasonal advent of genius among the different nations it becomes important to consider whether the predominance of the varying periods in the calendar of

genius for the several nationalities could be due to an unusual mortality for infants at other seasons.

It is apparent that if the last seven months of the year in America are particularly inimical to infant life, genius-births and general births alike will gather to the first five months, and so our figures would be meaningless. Thus, also, if the portion of the year in England from May to October is especially deadly to infant life we would necessarily have for genius-births the very period we find in our tables. In the case of French genius, upon the same theory, the period of greatest mortality for infants would embrace the portion of the year from October to March, with the exception of January, German births upon that basis would point to the period from June to October as carrying the greatest menace to babyhood, and the figures for Italy would cast a shadow over the period from October to June as the most baneful to the lives of children with the unexpected exception of the month of March.

Exact data as to infant mortality in the various countries with which we are concerned during the several seasons we have found it impossible to obtain. If such statistics are available they are not offered by the sources we have been able to consult. The nearest approach to a dependable table is afforded by Mulhall's *Dictionary of Statistics,* dealing with the influence of season upon the death rate of infants under two years for Holland, Belgium, Nice, Genoa, Naples and Palermo in one group, and deaths under thirty days for another group consisting of Austria, Belgium, France, Florence, and other countries and localities, the irregular character of these statistics attesting the difficulty which must have confronted the author of the work in gathering the information required for his purposes. Reduced to percentages as regards the first group the mortality under two years was .234 for spring, .268 for summer, .231 for autumn, and .265 for winter, making a total of .998, disregarding the smaller fractions, and for the second group the proportion was .251 for spring, .201 for summer, .226 for autumn, and .321 for winter.

If these figures for infant mortality are typical of variations for the different seasons throughout all European countries, that factor will not serve as an important element in the problem so far, at least, as European genius is concerned, and it cannot account, therefore, for the shifting emphasis of genius birth-months through

the year with the varying nationalities. That this is true in the case of birth-months for the general population of all Europe, we have already seen, since genius birth-months and general birth-months parallel each other in the tables we have used. A test of the question by general birth-months for the various nationalities might be profitable, but those figures, as we have seen, baffle our search, such treatises upon the statistics of population as are available to the present writer being silent upon the question.

So far as concerns their bearing on American genius the statistics of infant mortality, as prevailing at present, are available in full detail in the *Census Report* for 1925 we have used in this discussion. From table 21, at page 188, it appears that infant deaths from all causes for the birth registration area in continental United States were 134,652, of which the distribution according to months was as follows: January 12,430, February 11,950, March 13,293, April 11,468, May 10,797, June 9,840, July 9,968, August 11,640, September 12,224, October 11,256, November 9,445, December 10,341. Comparing these figures with the birth-months of the general population, as disclosed by the same report, we discern a manifest tendency for high mortalities to accompany high birth-months, with only slight disturbance of the results here and there by seasonal factors especially menacing to infant life. There is nothing, however, as reflected in those tables, which would explain the high place of January in our figures for American genius birth-months.

If, as the indications suggest, infant mortality does not account for the segregation of genius birth-months and the figures in our tables are, as would seem to be the case, fairly representative so as to exclude accidental factors, we have reasonably definite periods among the different nations for the uprise of genius, which, translated into periods for the beginning of life, should give the months or seasons with peculiarly favorable auspices for genius.

X

A tabulation of the genius birth-months in Cattell's list by vocations, seems, in some measure, to disclose favored birth-months for varying *types* of genius. Of eminent personages connected with the church, 27 were born in the latter half as against 8 in the earlier half of the year, and much the same is true of poets, with whom the ratio is 25 to 15, and scientists, with whom the proportion is 30 to 24. On the other hand, 25 philosophers saw the light in the

earlier half as against 15 in the latter half of the year, and in the case of statesmen the numbers are 25 to 20, in the case of soldiers 22 to 13, in the case of composers 8 to 4, painters and sculptors 8 to 6. In the case of writers, including historians but not including those classed in the biographical dictionaries as philosophers, the proportion is only 26 to 25.

Whether these figures betoken the existence of climatic or other influences during the varying seasons inclining the child before birth to one instead of another line of endeavor is a question that instantly occurs. A test of the problem by anything less than the most exhaustive methods would be inconclusive nor would the results be worthy of acceptance until checked and rechecked by the statistics of birth-months for the several orders of genius in the different regions of the globe. The outward conditions which prevail at one period of the calendar in one region must be looked for in another at a different period and in such an inquiry a test of genius births in the Northern hemisphere by the genius births for the same season in the Southern hemisphere of the globe is logically called for.

If, however, after due consideration of all these elements, and upon the basis of a catalogue of names sufficiently large, the results show a well-defined tendency of certain types of genius to select definite periods of the year for the beginning of life, we are at the threshold of a principle of obvious importance. "Telling fortunes" by birthdays might in that case cease to be the inane thing it now is, beguiling the tedium of an idle hour, and become the sober task of the scientific eugenist.

That, in reality, whether for genius at large or for special orders of genius, favored birth-months exist, either in America or elsewhere, we do not pretend to say. The figures in these pages, with their singular challenge, we submit as we find them in our calculations. They have been gathered, as were the figures for earlier papers in the same series and papers yet to be published, during hours snatched from a busy professional life. To others, more richly blest with leisure, and better fitted by faculty and training, must be left the task of pursuing further the intricacies of this bizarre subject.

The predominance of January, in particular, among the birth-months of American genius can scarcely exist in so large a measure

as our chance figures would imply. Those figures must rest, to a large extent, upon mere coincidence. To throw one-fourth of the names in the muster-roll of American genius into the month of May for the beginning of life—even with the proverbial beauty of that month and its suggestiveness in far-flung bloom through scented fields and gardens—would require vastly more evidence than our tables supply. The whole subject of seasonal influence in the production of talent and genius awaits, in reality, the hand of its master. The present brief study makes no pretense to finality or scientific authority. To Professor Visher, of Indiana University, who is doing such conspicuously notable work in the statistical study of genius, and others like him, we must look for the exhaustive investigation which shall resolve all doubt.

That such studies, however, possess a peculiar fascination, quite apart from their real or fancied importance, is eloquently attested by their increasing popularity. In 1907, when the first of the present series of papers appeared, few individuals, either in America or England, were interested in such researches. In the interval of twenty years between that day and this such inquiries have become, not only the sober task of scores of special workers, but the pastime of hundreds of amateurs. The recent articles in *Liberty* based upon *Who's Who in America,* with their striking appeal to the man in the street, are a sufficient token that the quest for the secret of genius is on in good earnest and that whoso cares to take up and pursue the thread of these studies may be sure of a wide and interested audience, in pleasant contrast with the painfully limited public which responded to such labors in the past.