



RELIGIOUS BELIEFS OF AMERICAN SCIENTISTS

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A FEW scientific men have been outspoken either for or against religion, but until recently there existed no available knowledge concerning the attitude of the great majority of them toward religion, and opinions were disconcertingly contradictory. Curiosity as to the beliefs of scientific men is justified, for they enjoy great influence in the modern world, even in matters religious.

The purpose of this paper is to set forth statistical information gathered in 1933 regarding the attitude of the American men of science toward the two central beliefs of the Christian religion: a God influenced by worship, and immortality.

The significance of these statistics is greatly increased by the tabulation of the results according to the different branches of science and by the separation of the more from the less distinguished men. How that separation was made will be said in the proper place. Moreover, a comparison will be made, group by group, of the statistics secured in 1933 with similar statistics gathered in 1914. To this will be added the outcome of a less extensive investigation referring to the same beliefs among college students.

I am well aware that statistics may not claim immunity from scrutiny. The reader will want to know what reliance he is to place on the figures about to be offered him, and whether

they are valid, as I claim, for *all* the American men of science. I must, therefore, give a brief description of the way in which the statistics were gathered.

It would not have done to inquire simply: "Do you believe in God?" That would not have been a sufficient designation of the object of the inquiry, for there are different conceptions of God. There is, for instance, that of Robert A. Millikan, Nobel Prize winner for 1923. Science, says he, shows us a "universe that knows no caprice, a universe that can be counted upon; in a word, a God who works through law. . . . The God of science is the Spirit of rational order and of orderly development." That is substantially what the great philosopher of the 17th century, Spinoza, had said: "By the help of God I mean the fixed and unchanging order of nature." One should, of course, be careful not to confuse the "Spirit of rational order" with the God who demands worship and answers the supplicant. The God of Millikan and of Spinoza cannot be influenced by supplication, adoration, etc.; he is not the God of our Churches. Strange to say, the old philosopher was persecuted for atheism, while the modern scientist is acclaimed as a defender of religion!

I submitted to the American scientists for acceptance or rejection the following three statements: "(A) I be-

lieve in a God to whom one may pray in the expectation of receiving an answer. By 'answer' I mean more than the natural, subjective, psychological effect of prayer. (B) I do not believe in a God as defined above. (C) I have no definite belief regarding this question."

I chose to define God as given above because that is the God worshipped in every branch of the Christian religion. In the absence of belief in a God who hears and sympathizes with man, and who, under certain conditions, answers his prayers, traditional worship could not go on. It appeared to me, therefore, of the greatest interest to secure definite information regarding the prevalence of that belief among scientists and students.

Many of the disbelievers in the God defined were annoyed that I had not provided a way for them to say in what other God they placed their faith. They feared that a negative answer to statement (A) would class them among the materialists—to them a very obnoxious company. For, although these disbelievers reject the God of the religions, they are at one with most contemporary philosophers in placing a spiritual Power at the root of the Universe. A distinguished chemist wrote, for instance, in a note added to his answers: "I cannot subscribe to statement (A), but I, nevertheless, believe in a God. To classify me as one who does not believe in a God as here defined would be misleading to anyone who has not carefully noted how you define God." Very well, let us not call this man an atheist; let us speak more discriminately, and say only that he does not believe in the kind of God worshipped in the religions. Praising God, supplicating him for the good things one may want, returning thanks for his assistance, seem to this man a futile behavior, because, as many of my correspondents said, "God is not

moved to action by my desires or my feelings; he acts according to his laws." For one who holds that conception of God, a conception widely prevalent among scientific men, the way to secure one's desires is to discover the laws of the Universe (psychical, biological, and physical) and then to conform one's behavior to them.

I wish I might say how many of the disbelievers in the God of the Churches are, nevertheless, anti-materialists. Unfortunately, in order to make the task of my correspondents easy, I had to restrain my curiosity.

Regarding immortality three statements, corresponding to those referring to God, were presented. The first read: "I believe in continuation of the person after death in another world." Thus both belief in the survival of the self with a body of some sort, and survival of the self without a body, are included in the affirmation of that statement. Whereas, what is sometimes called "social immortality," *i.e.* the continuation of the influence of a person after death upon persons still living, is not.

Dr. Cattell's *American Men of Science* provided me with the needed list of scientists. The latest edition (1933) includes about 23,000 names, which means that every person who had the slightest claim to it found a place in that directory. But sending a questionnaire to so many people would have been too arduous an undertaking. Neither was it necessary. According to the experimental findings of statisticians, the answers of even one-tenth of a group, when it includes several hundred individuals, yield results very like those which would be obtained if every individual in the group had answered—this, providing no vitiating selection in the choice of the tenth has taken place. Polling a sufficiently large proportion of the group, while avoiding the "sampling" error, was then the first

condition to be realized in order to get valid statistics.

Because of the widely different size of the classes into which I divided them, or for other practical reasons, the proportion of scientists to whom the questionnaire was sent was not the same in every class. It was least in the two largest, designated here as "physicists" and "biologists." In the first I included all the scientists concerned with inanimate matter—physicists proper, chemists, geologists, astronomers, engineers, etc.; in the second, all those concerned with living matter—biologists proper, physiologists, bacteriologists, botanists, horticulturists, etc. One tenth of these two very large classes received the questionnaire. As to the teachers of sociology and of psychology, and those engaged in research in these two fields, about half of them received it.* In order to avoid the sampling error, those to be included in the inquiry were chosen in every instance by a rule of chance.

A second condition for trustworthy statistics had to be fulfilled: answers had to be obtained from a sufficiently large proportion of those who got the questionnaire. I succeeded in securing, in each class, answers from at least 75 per cent. Among the sociologists and the psychologists the proportion rose to 83 per cent; and, among the 50 "more distinguished" representatives of the latter class, it reached 90 per cent.

Had those who received and did not answer the questionnaire answered it, the figures would not have been

* The term "sociologist" is used so widely and loosely that I found it advisable to consider only the teachers in colleges and universities, and those occupied in sociological research. About half of these were marked off, according to a rule of chance, in the last published membership list of the American Sociological Society (1931), making altogether 157 names to whom the questionnaire was sent.

A similar procedure was followed for the psychologists. From the last Year Book (1933) of the American Psychological Association, 114 names were singled out from among the active members who teach psychology or are engaged in research. To these were added, in a way to be explained later, 50 names to make up the group of the greater psychologists.

changed in any important degree, because the delinquents were not numerous enough and, more especially, because there is no reason to suppose that they were not distributed in about the same way as those who answered. A few of them were absent or ill and could not answer. As to the others, they did not take the trouble to do so because they thought (mistakenly, as it proved) that nothing could come out of the inquiry; or, that it were better if people did not know what scientists believe; or, more commonly, they were too busy or too indifferent.

Several returned the questionnaire with remarks intended to justify their refusal to answer: "Most of those who believe in God will answer an inquiry like this. Most of those who do not believe in God will put it in the waste basket. How are you to draw any conclusion?" It turned out, however, that over half of all the scientific men who answered are disbelievers and, in certain classes, a much larger proportion. Another wrote: "I am refraining from complying with your request because I believe that real harm is done in announcing to the world the opinions of scientists relative to religious matters."

Several refused to answer because, as I had occasion to remark before, by limiting their answers to the statements offered them, they could say only what they did not believe and not what they did believe: "Forgive me if I return your inquiry unanswered. It is not because of indifference, but only because I could not, in answering any of the questions, give any fair expression of my own attitude toward God and immortality." This person and a few others did not answer because they wanted to be asked other questions! It is worth noticing that the instances of refusal to answer, in which a reason was given, came obviously from disbelievers in the God defined.

We come at last to the results of the inquiry. Let it be recalled that the term "physicist" denotes all the scientists concerned with inanimate matter and the term "biologist" all those concerned with living matter. In the following table, as in all the others, the figures are percentages of the total number of those who answered.*

	THE BELIEF IN GOD		
	<i>Believers</i>	<i>Disbelievers</i>	<i>Doubters</i>
Physicists	38	47	16
Biologists	27	60	13
Sociologists	24	67	9
Psychologists	10	79	12

If class distinctions are disregarded and all the scientists put together, one gets 30 per cent of believers in a God moved to action by the traditional Christian worship: supplication, thanksgiving, songs of praise, etc.; 56 per cent of disbelievers; and 14 per cent of doubters.

The order in which the four classes of scientists place themselves with regard to the proportion of believers should by no means be disregarded. The scientists concerned with inanimate matter come first with the largest percentage (38 per cent), and those concerned with the mind come last (10 per cent); the biologists and the sociologists occupy intermediary positions. Does a knowledge of animal and plant life make belief in an interventionist God difficult, while psychological learning makes it almost impossible? These figures provide food for serious reflection, but before commenting upon their significance, let us consider the statistics on immortality.

II

Probably all the uncivilized believe in continuation after death; it is for them a fact as firmly established as the

* The total of the believers, disbelievers, and doubters in any group should be 100; but as I counted as one the halves and the fractions over the half and dropped the other fractions, the sum may be 101 or 99.

reality of the objects about them. But it would be a mistake to think that they desire it; their own survival leaves them indifferent. Not so, however, the survival of those who have preceded them in the Other Life; their doings and intentions are a source of much anxiety to those who have remained behind.

Among the civilized the situation is different: many who desire immortality cannot persuade themselves of its truth; and some who do not want it hold it to be inescapable. Desires and belief do not always pull in harness!

The history of immortality shows that it is extraordinarily difficult to understand how a being can exist in a satisfactory way without a body of some sort. The uncivilized did not think it possible, and so they did their utmost to prevent the body from falling to pieces at death. They embalmed it and, when they could, protected it with massive, indestructible monuments. The early Christians were not better able than the old Egyptians to understand the continuation of life without a body; its resurrection was set down in the creeds as an article of faith, and present-day theologians continue to struggle with the problem.

Many Fundamentalists accept the view of Tertullian, a Church Father of the second century, who held that the celestial body has the form and appearance of the earthly one. Asked of what use the teeth could be in heaven since the Blessed did not eat, he replied that they served to illumine an eternal smile.

As to the Modernists, they continue, on the whole, in verbal agreement with the creeds. They hold, however, that the celestial body is something utterly different from the earthly one. But how different? Here they get into a bad muddle. "We believe for certain in the resurrection of the body," said the English Bishop Gore. "This does

not mean that the particles of our former bodies, which have decayed, will be collected again; but it means that we in our same selves shall be re-clothed in a spiritual body." Unfortunately, the two words "spiritual body" and "body" flatly contradict each other: what is spirit is not body, and what is body is not spirit. Nevertheless, that unintelligible expression, "spiritual body," gives satisfaction to a great many.

Another English theologian, Canon B. H. Streeter, struggling with the same difficulty, throws out this venturesome suggestion: "We may suppose that during our life on earth we are, although we know it not, building up an unseen celestial body, which is a sort of counterpart of our earthly body. Or, again, we may hold that the death of this body is the very act of birth of a new body." Dr. S. D. McConnell, the American Episcopal divine, looks to the wisdom of the East for help. He speaks of an "astral" body. That is a body "material to be sure, but compacted of a kind of matter which behaves quite differently from that which our sense perceptions deal with." Others prefer to "astral" the term "ethereal," for it is a term upon which science has conferred a high degree of respectability.

The difficulty involved in the survival of a soul able to enjoy an active existence without some sort of material body is so great, and the contradiction involved in the expression "spiritual body" is so undeniable, that modernists like Professor William Adams Brown, of Union Theological Seminary, prefer to stop with the bare affirmation of the survival of the *personality*; thus they get over an insurmountable difficulty by ignoring it. It remains that for these theologians, as the Reverend Dr. Fosdick has remarked, an instrument seems necessary for the "effective execution of our social purposes in the Other Life."

The would-be believer in immortal-

ity is beset by another enormous difficulty: not any kind of existence is desirable. Life in heaven could not be mere contemplation, for life means activity; eternal immobility would not be life. And such an occupation as twanging harps at the feet of the Lord during all eternity would be an unbearable pastime—if not immediately, then after the first few hundred years. What might be a worthwhile occupation for heavenly souls? Dr. Fosdick, without specifying farther, speaks of the "execution of our social purposes in the Other Life." To what social purposes might efforts be directed in order to make life eternally endurable?

The impossibility of conceiving a kind of celestial life which could last forever and be satisfactory has compelled the keenest among the religious leaders to say, in effect, that the best we can do here, as with the question of the soul's body, is to refuse to think about it. They agree with Dr. van Dusen: "Concerning the nature of life after death we know practically nothing save one thing—and we want to know only one thing—that it is good." There are, of course, others in high positions who want to know, and think they know, much more. Bishop Manning, of New York, for instance, knows nearly as many details concerning the other life as the uncivilized who picture the ghosts as very much like the individuals on earth. Says the Bishop: "When I enter there (heaven) I shall be myself. This personality, these tempers and tastes, this character that I am forming here will be mine there. I shall be seen as myself, and I shall be judged by what I am, I shall know my dear ones in the other life. I shall see and be seen, I shall speak and be spoken to." (Easter Sermon, 1931.)

The motives for believing in immortality must indeed be compelling if, despite the well-nigh insuperable difficulties offered by the destruction of the

body at death and by the impossibility of conceiving a satisfactory life after death, men in very large numbers believe in its reality. Outside of a general aversion for extinction, the most powerful of these motives are doubtless the cravings for the vindication of justice and for the continuation of love—two things to which supreme value is attached.

In a general way the scientific men who believe in the God of the religions believe also in immortality; the two beliefs usually go together. The proportion of believers is nearly equal: 33 per cent for immortality and 30 per cent for God. But there is a much smaller number of downright disbelievers in immortality: 41 per cent against 56 per cent. This difference is compensated by a markedly larger number of doubters in immortality, so that when disbelievers are added to doubters one gets almost identical figures for immortality and for God: 67 per cent against 70 per cent. Apparently the problem of life after death leaves scientific men more often perplexed than the problem of a God in social communication with man.

The several classes of scientists remain in the same order in the table on immortality as in the one referring to God: the physicists head the list with the largest proportion of believers (41 per cent) and the psychologists close it with the smallest (9 per cent).

THE BELIEF IN IMMORTALITY

	Believers	Disbelievers	Disbelievers and Doubters
Physicists	41	32	60
Biologists	29	44	71
Sociologists	25	48	75
Psychologists	9	70	91
All together	33	41	67

III

It had occurred to me that it might be worth while to find out what differences there are in matters of religious

belief between scientists of different degrees of eminence. It would, of course, have been impossible for me to make the separation. Even had I been competent, it would have been inadvisable: I might have been suspected of prejudice in the choices I should have made. Fortunately, a certain proportion of the names listed in *American Men of Science* are starred; they are the names of the more distinguished men. How Dr. Cattell made the selection may be found in that book. I might say, however, that it was, in each science, the joint work of a dozen prominent men in that science.*

THE BELIEF IN GOD

	Believers	Disbelievers	Disbelievers and Doubters
Lesser Physicists . . .	43	43	58
Greater Physicists . .	17	60	83
Lesser Biologists . . .	31	56	69
Greater Biologists . .	12	76	88
Lesser Sociologists .	30	60	70
Greater Sociologists	20	70	80
Greatest Sociologists	5	95	95
Lesser Psychologists	13	74	87
Greater Psychologists	2	87	98
All Lesser Scientists	35	51	65
All Greater Scientists	13	71	87

In every one of the four classes the more eminent men provide a much smaller percentage of believers. That this is not an accident is made evident by the statistics on immortality and by the investigation of 1914.

Why this unflinching difference in every branch of science between the more and the less eminent men? Why this wholesale rejection of immortality and of the God of the religions by the most distinguished scientific men? Be-

* The group of the Greater Physicists numbered 215 persons, and that of the Greater Biologists 171.

It has already been said in a footnote that the membership list of the American Sociologist Society was used, instead of Dr. Cattell's directory, to make a list of 157 sociologists. With the help of four distinguished sociologists, 49 persons were selected out of that list to constitute two groups, one of the Greater and one of the Greatest Sociologists. Forty out of these 49 eminent sociologists answered the questionnaire.

The group of the Greater Psychologists was made up of the 50 starred names added since 1906 to the psychologists already starred in the edition of *American Men of Science* of that date.

fore venturing an answer, let us complete the presentation of the facts at hand. There remains for us to consider the statistics gathered in 1914 and to compare them with those just presented.

THE BELIEF IN IMMORTALITY

	Be- lievers	Dis- believers	Disbeliev- ers and Doubters
Lesser Physicists	46	29	55
Greater Physicists	20	43	80
Lesser Biologists	32	40	68
Greater Biologists	15	62	86
Lesser Sociologists	31	40	69
Greater Sociologists	10	60	90
Greatest Sociologists	10	70	90
Lesser Psychologists	12	65	88
Greater Psychologists	2	79	98
All the Lesser Scientists	37	36	62
All the Greater Scientists	15	56	85

Many have found pleasure in affirming that since the War there has been an increase of religious belief. One may, probably, understand "religious belief" in such a way as to make that statement true. But if one has in mind the two cardinal beliefs with which we are concerned, the data I have gathered tell another tale.

The investigation made in 1914 was carried out in the same way as that of 1933. The edition of 1906 of *American Men of Science* (then the most recent one) was used, and the statements submitted to the scientists were identical in both investigations. A number of names appear, of course, in both the editions of 1906 and 1933. What we are comparing is, therefore, not two altogether different sets of men, but the scientific men living in 1914 with those living in 1933.

It is the first time that such a comparison is possible. For many years past the civilized world has been in possession of exact information regarding the variations of population, of wealth, of industrial production, etc.; and has, therefore, been able to guide its policies and activities in the light of that knowledge. But regarding

changes of religious belief and, for that matter, of any kind of conviction, we have had until now only opinions, often conflicting and, in any case, worthless when exact knowledge was wanted.

Now for the first time we are in possession of a solid, if limited, basis of information regarding the modifications in religious convictions which have taken place in large and influential bodies of men. The importance of that knowledge will not be denied by those who realize that the course of human events not only determines beliefs, but is also determined by them.

In the inquiry of 1914 the believers amounted to 42 per cent, against 30 per cent in 1933; the disbelievers to 42 per cent, against 56 per cent; and the doubters to 17 per cent, against 14 per cent. A marked increase in unbelief during the last two decades is thus recorded. That increase does not appear only in an average of all the scientists; it appears also in each of the different classes, and in the more as well as in the less distinguished groups, with the single exception of the Lesser Sociologists, where the figures are almost the same.

THE BELIEVERS IN GOD

	Lesser Scientists		Greater Scientists	
	1914	1933	1914	1933
Physicists	50	43	34	17
Biologists	39	31	17	12
Sociologists	29	30	19	13
Psychologists	32	13	13	12

Corresponding differences appear in the statistics for immortality:

THE BELIEVERS IN IMMORTALITY

	Lesser Scientists		Greater Scientists	
	1914	1933	1914	1933
Physicists	57	46	40	20
Biologists	45	32	25	15
Sociologists	52	31	27	10
Psychologists	27	12	9	2

In every group, without exception, the figures for 1933 are considerably smaller than those for 1914. It should be noted also that, both with regard to God and immortality, the order in

which the four classes arrange themselves with regard to the proportion of believers is the same in the two investigations.

IV

If it may be said that the foregoing statistics represent adequately the prevalence of the belief in the God of the religions and in personal immortality among *all* the men of science, the same claim may not be made for the statistics of students; for my investigation, in so far as reportable here, was limited to two colleges. One of them, College A, is of high rank and moderate size. Its students come from families divided in their affiliation between all the important Protestant denominations, and its spirit is probably as religious as that of the average American college. College B is, as to religion, much less nearly representative; it is definitely radical in its leanings.

In 1933, 93 per cent of the students of College A and almost as large a proportion of those of College B answered the questions on God. In College A, there were 31 per cent of believers in God, 60 per cent of disbelievers, and 10 per cent of doubters. In College B, the corresponding proportions were 11 per cent, 74 per cent and 15 per cent.

A decrease in the number of believers takes place in both colleges as the students pass from the freshman to the senior class. In the radical College B, believers have almost disappeared by the time the students have reached the senior class:

THE BELIEVERS IN GOD, 1933

	<i>College A</i>	<i>College B</i>
Freshmen	34	20
Sophomores	37	14
Juniors	30	6
Seniors	20	5
All together	31	11

I am unfortunately unable to give an account of an earlier, more extensive investigation of the belief in God among students. I can say, however,

that the proportion of believers in an interventionist God was considerably larger in College A in 1914 than in 1933.

Confirmation of my findings referring to students comes from Professor Floyd Allport and Dr. Daniel Katz. In 1926 they carried out a comprehensive statistical investigation of the attitudes and beliefs of the students of Syracuse University. It bears upon personal ideals, sex relations, moral standards, church attendance, religious beliefs, etc. Unfortunately, they did not take up immortality; but the manner in which they formulated the questions regarding God makes possible a comparison of their statistics on this point with my own. I know of no other investigation where that is the case.

When they entered college, 39 per cent of the students of the College of Liberal Arts of Syracuse University (the college numbers about 1,500 students) believed in a God "to be supplicated through worship and prayer," and only 21 per cent when the inquiry was carried out in May, 1926. The time already spent in college by the students when they expressed their convictions had varied, therefore, from nearly one year to nearly four years.

The decrease of belief indicated by my own statistics is less marked, partly probably because a larger proportion of the students arrived at Syracuse University with orthodox beliefs.

Of the students who entered the College of Liberal Arts believing in a God to be worshipped and prayed to, 47 per cent changed to another belief during their college career. Regarding these changes, the authors point out that it is not the atheist group which benefited most, but the groups of believers in a spiritual Being not influenced by prayer.

In 1914 and again in 1933 I secured expressions of conviction on immor-

tality from over 95 per cent of all the students of College A. As to College B, no inquiry was carried out in 1914, but over 90 per cent registered their convictions in 1933. The percentages obtained are as follows:

THE BELIEF IN IMMORTALITY, COLLEGE A

	Believers		Dis-believers		Dis-believers and Doubters	
	1914	1933	1914	1933	1914	1933
Freshmen	80	42	15	33	20	58
Sophomores	76	50	19	30	24	50
Juniors	60	37	32	37	40	63
Seniors	70	27	24	47	30	73
All classes together	39		37		61	

THE BELIEF IN IMMORTALITY, COLLEGE B, 1933

	Believers		Dis-believers		Dis-believers and Doubters	
	1914	1933	1914	1933	1914	1933
Freshmen	29		44		72	
Sophomores	20		44		80	
Juniors	14		63		86	
Seniors	5		68		95	
All classes together	18		55		83	

In College B the believers constitute a surprisingly small part of the student body, and their number decreases rapidly as the college years pass. But, as I have already remarked, that institution is not typical of the average American college.

If these statistics, referring either to one or to two colleges only, indicate what is taking place among students in general, it would appear that: (1) The students, in considerable numbers, lose their beliefs as they pass from the freshman to the senior year. (2) During the last twenty years a marked decline in belief has taken place, a decline similar to the one revealed by the statistics of scientists. The first of these diminutions measures changes undergone by individual students during the four years spent in college; the second testifies to the change in beliefs which has taken place during the last two decades in the social circles from which the students come. (3) Both in 1914 and in 1933, the number of believers in God is smaller than that in immortality; this, it will be remembered, was also the case among the scientists.

How far religious beliefs are matters of tradition may be gathered from the fact that in the older investigation (the only one in which this was inquired into) 51 per cent of the believing freshmen admitted that they had never assigned any reason for their belief in immortality. That is not very surprising. One may, however, be astonished at the discovery that three years later, in the senior year, the proportion of naïve believers had been reduced only to 40 per cent. One cannot fairly accuse these mature senior students of being too critical of religious beliefs imbibed in their infancy.

V

The statistics presented in the preceding pages have revealed that the larger proportions of believers are found in the following categories of persons: (1) the scientists who know least about living matter, society, and the mind; (2) the less eminent men in every branch of science; (3) the scientists and the students of twenty years ago; (4) the students in the lower college classes.

What do these facts signify and how are they to be explained? It has been urged in certain quarters that pride is the curse of ambitious men of great mental power, that it blinds them to religious truths visible to the lowly. How could that be true *in general* of men whose task is the discovery and teaching of the truth regarding the universe and man?

That unnatural explanation would, in any case, not account for the decrease in belief when 1914 is compared with 1933, nor for the order in which the four classes of scientists arrange themselves with regard both to belief in God and immortality. In order to account for the constant position of the physicists at the top and of the psychologists at the bottom, with the bi-

ologists and the sociologists between, one must invoke, it seems, the different kinds of knowledge possessed by the several classes. A physicist may think it useless to pray for divine action on physical nature, for he knows that law rules in that sphere. But, because of his comparative ignorance of biological and mental law, he is, in those spheres, more ready to believe in divine action in response to human supplication. The moral life in particular may seem to him outside or beyond the determinism apparent in the physical world, whereas the psychologist has learned that character, no more than the weather, is controlled by fiat, either human or divine.

It will appear to most, I think, that superior knowledge, understanding, and experience constitute a much more likely explanation of the association of disbelief with scientific eminence and with progress in a collegiate career than a blinding pride waxing together with mental ability.

In my opinion, however, there should be added to knowledge and experience another cause of disbelief. Sir Francis Galton, a pioneer in the exact study of traits of personality, wrote in his *English Men of Genius*: "The first of the qualities of especial service to scientific men is independence of character." The discoverer of the new is not likely to be the man enslaved by generally accepted conceptions. To make oneself free from the old, whenever knowledge shows it to be false, requires independence of mind. Other things being equal, the more complete the mental freedom the better the chance of rising in the world of science. Therefore, it is, as Galton found, that men eminent in the intellectual realm are not only men of great intelligence but also of great independence of character.

Now, to set aside the authority of sacred institutions, to break with tradi-

tions hallowed by centuries of veneration and cherished by many to whom one is bound by ties of affection, is not easy to do. Even though knowledge should seem to demand it, a break may not be achieved without a considerable measure of independence. Thus that trait, helpful in attaining eminence in scientific pursuits, is also helpful in freeing oneself from generally accepted religious beliefs when new knowledge condemns them.

A few words may be said in closing on a question probably in the mind of the reader: what will become of the churches if the movement away from the God worshipped in them continues? During the last century the gains in the understanding of matter and of man, and in the diffusion of that knowledge, have increased in something like geometrical progression. If knowledge is, as it seems, a cause of the decline of the traditional beliefs, that decline will presumably continue as long as the increase in knowledge. As to independence of character, it will, of course, continue to exert its influence and, under the liberating action of education, will be increasingly effective.

Unless a reversal of the movement revealed by the statistics—and I do not know on what ground that may be expected—should take place, the churches will continue to lose their already diminished influence and suffer the penalty due to institutions which remain unaltered in a changing world.

In order to be again a vitalizing and controlling power in society, the religions will have to organize themselves about ultimate conceptions that are not in contradiction with the best insight of the time. They will have to replace their specific method of seeking the welfare of humanity by appeal to, and reliance upon divine Beings, by methods free from a discredited supernaturalism.