

Bowditch (H.A.)

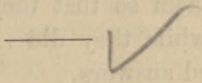
ANALYSIS OF A CORRESPONDENCE
ON SOME OF THE

REASON, Nov. 10th, 1885

ANALYSIS OF A CORRESPONDENCE

ON SOME OF THE

CAUSES OR ANTECEDENTS OF CONSUMPTION.



BY HENRY I. BOWDITCH, M. D.,

CHAIRMAN OF THE STATE BOARD OF HEALTH.

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ANALYSIS OF A CORRESPONDENCE ON SOME OF THE CAUSES OR
ANTECEDENTS OF CONSUMPTION.

BOSTON, Nov. 10th, 1872.

To the Members of the Massachusetts State Board of Health.

GENTLEMEN:—In accordance with a vote passed by the Board, the following circular and list of questions were prepared. Some of these questions are evidently connected with what are usually deemed antecedents of consumption in Massachusetts, while others may seem to have little bearing upon them, and may be deemed futile or irrelevant.

Following a plan I have pursued in other kindred investigations, I prepared them so that they might be answered even monosyllabically, while they did not prevent, but rather invited, more detailed answers.

The result has been that I have received responses from over two hundred physicians. The tabular statements that will be given under each question are founded on returns from two hundred and ten. Other letters were received after the calculations were finished, and these are given either in the body of the correspondence or in an appendix. One hundred and forty-two came from Massachusetts, and sixty-eight from other parts,—Maine, Vermont, New Hampshire, Connecticut, Rhode Island, New York, Pennsylvania, Illinois, Michigan, London and Germany. These correspondents are physicians in active practice. Some of them are the most prominent men in the places where they reside,—prominent for their personal qualities, and as physicians. They represent at least tolerably well the medical profession of the various places from which they write. The "medical opinion," therefore, on the various questions, which comes from them, is worthy of the respect not only of this community, but of any one who feels an interest in the questions themselves.

It may seem to many, as I have already stated, that the questions might have been very differently and better prepared; some that evidently might have been asked do not appear on the list. On the questions of intoxicating liquors, and their effects towards the production of consumption, it may seem that I have been too diffuse. The interest in the vast subject of intemperance in this community, and the obvious design of the legislature that, if possible, the various questions connected with the subject shall be discussed by our Board, is my only excuse for any prolixity that may be noticed in this particular.

If my life and health are spared, I hope, at a future time, to give more particularly my own views on the possible "Prevention of Consumption in Massachusetts." The labor involved in such a work will necessarily be long and irksome, inasmuch as I hope to have it based on private records of the cases of consumption I have seen since March, 1839; that is, during a period of thirty-three years. It is impossible for me to say how soon I can accomplish this object.

Meanwhile I remain, gentlemen,

Your friend and colleague,

HENRY I. BOWDITCH.

MEDICAL PUBLIC OPINION

ON

CERTAIN QUESTIONS PROPOUNDED BY THE STATE
BOARD OF HEALTH,

ON SOME OF THE

CAUSES OR ANTECEDENTS OF CONSUMPTION.

The following circular and accompanying questions were sent out to our correspondents. The twenty questions will form so many subdivisions of this paper. After these will be found, in an appendix, certain more elaborately written letters, some of them coming from eminent physicians:—

COMMONWEALTH OF MASSACHUSETTS.

[Circular.]

STATE BOARD OF HEALTH, BOSTON, July 6, 1871.

DEAR SIR:—The State Board of Health has requested its chairman to report upon the means of preventing consumption.

The following schedule of questions has been drawn up by Dr. Bowditch for circulation among our regular correspondents, and other physicians, in the various parts of New England and elsewhere.

It is hoped that those who may receive it will be ready to assist in the collection of facts, by at least replying with a dot or dash under the words "Yes," or "No," opposite the different questions. But Dr. Bowditch will gratefully receive more detailed statements, and especially cases relating to family or personal history, involving the apparent causes or antecedents, or means of preventing this too frequently fatal disease.

As our report must be ready at the close of the present year, and time will be needed to analyze the returns, the undersigned would respectfully request that replies be made at as early a day as our correspondents may find convenient.

In behalf of the State Board of Health,

Very respectfully, your obedient servant,

GEORGE DERBY, M. D., *Secretary.*

(This half-sheet can be returned, in the accompanying envelope, to the Secretary of the Board, with such additional information as our correspondents may be willing to furnish.)

Opinions of Dr. _____ of _____, State of _____

1. Is consumption caused or promoted by hereditary influences?
2. Can consumption be apparently prevented from occurring in children so hereditarily disposed?
3. What special means can be used for such prevention?
(If so, please name these means on another sheet.)
4. Is consumption caused or promoted by the drunkenness of parents?
5. " " " " " " " of an individual?
6. " " " " " " " prevented " " " " "
7. " " " " " " " by total abstinence " " "
8. " " " " " " " caused or promoted by the " " " " "
9. " " " " " " " " overstudy at school or college?
10. " " " " " " " " overwork in trades?
11. " " " " " " " " special trades?
12. " " " " " " " " overwork of any kind?
13. " " " " " " " " severe bodily injuries?
14. " " " " " " " " " mental trouble?
15. " " " " " " " " marriage?
16. " " " " " " " checked by marriage (child-bearing, &c.)?
17. " " " " " " " caused or promoted by inordinate sexual indulgence?
18. " " " " " " " " contagion or infection?
19. " " " " " " " " exposed location of dwelling?
20. " " " " " " " " wet " " " " "

Of course, the above are only a few of the causes that might be suggested. It is hoped that if any correspondent knows of any peculiar circumstances which he may deem important, in reference to the disease, information will be given in detail, as all facts upon the various questions will be gratefully received.

FIRST QUESTION.

IS CONSUMPTION CAUSED OR PROMOTED BY HEREDITARY INFLUENCES?

We have the following result from our correspondents:—

Yes,	. . . . .	205
No,	. . . . .	1
No reply,	. . . . .	4
Total,	. . . . .	— 210

This table shows at a glance that only one of two hundred and ten physicians denied the great importance of hereditary influence in the production of consumption. Coming, as these returns do, not from theorists, but from physicians who see families grow up and die under their own care, this re-

sult, though perhaps not unexpected by some readers, certainly not by myself, is very significant. If we can ever have faith in medical testimony, every parent, and, still more, every one preparing, by marriage, to become a parent, should consider himself as forewarned by the above table. Still further, will not the State feel obliged, at some future time, to restrain the marriage of persons liable to breed consumption, even if it be considered improper and contrary to liberty, at present, to interfere with or prevent any such marriage, however inevitably it may be destined to produce a consumptive, wretched progeny? Massachusetts has yet much to do in "Stirpiculture," ere she can claim to be really a mother to her people.

Until that period arrives, each man and each woman is bound to consider this most important question before marriage.

I am well aware that this caution may seem to ignore all those keener instincts and emotions which usually govern the attractions of young people to each other before marriage. I know, moreover, the beauty of that self-sacrifice which would, at times, unite one healthy young person to another perhaps far advanced in disease. But sentiment must be ignored in any suggestions drawn from these tables of God's law, whereby we know that the defects, as well as the high qualities, of the parent descend upon the child "unto the third and fourth generation."

Extracts from our Correspondents' letters relative to this question.

Brown.—I do not remember to have seen a well-marked case of consumption where I could not trace the taint in the ancestry of the patient.

Burr.—I can call to mind several families where I have been able to trace consumption through three generations.

Gott.—Whole families are swept off by the hereditary taint. I saw, the other day, a youth of sixteen, just gone with the disease, who is the sixth of eight children that have died of the disease. I have noticed where the disease has been so destructive, that the complexion is blond,—light and light eyes.

King.—I do not remember any case of consumption which did not appear to have an hereditary foundation.

Parks.—The only case to contra-indicate a belief in the hereditary tendency of consumption, and favoring the theory of Niemeyer—which I recollect—was one of fatal pulmonary consumption, in which for a year, or upwards, preceding the pulmonary consumption (as fully declared by rational symptoms and physical signs), there were several attacks of acute bronchitis, which could not be accounted for by exposure to cold or otherwise. The patient was an only child, whose mother is now living, at an advanced age, and whose own two children (her only ones) are living, and not consumptive adults. The patient's father I know nothing of.

Hurlbert.—I find here, young men (born of consumptive mothers), who follow the sea, and have fine, well-developed chests, who are as often the victims as those who stay on shore, and are not nearly as well developed. All our sea-faring men are well formed, but it does not protect against the deadly germ of a consumptive ancestry. Oftentimes I find a whole family tainted with this dreadful plague, when the parents are cousins, and no hereditary influences are traceable.

Gammell.—I will cite the case of a family living in Berkshire County, the facts of which are all authentic. The father, to-day, is a hale old man, over ninety years of age; the mother died of phthisis about twenty years ago. Of the thirteen children, four have died of the same disease; of forty-eight grandchildren, eight have died of the same. These all have occupied places of ordinary healthfulness, and all have been engaged in agricultural pursuits.

My opinion is that hereditary influences are rapidly developed under the influence of soil-moisture, or any cause that lowers the vitality, and that any employment which deprives such a person of sunlight, pure air, or out-of-door exercise, conduces to the development of the disease.

Bonney.—About the year 1831, Rev. Dr. B—— came to this place from Boston, and was settled over the Congregational Church. The last years of his residence here he occupied a house, situated upon an apparently dry and healthy and slightly elevated piece of ground; but the sills were near the ground, and from the bank (once the margin of the Connecticut River) some three or four rods distant from the house, issue numerous springs.* I am told that the doctor's wife was confined to her house in Boston, at one time, for a year, with some form of skin disease.

The following is the mortuary record:

Eldest daughter—L——,	died Feb. 2, 1837.	Age,	. . . . .	22
Mother,	“ Dec. 16, 1838.	“ . . . . .	. . . . .	43
Second daughter—L——,	“ July 12, 1839.	“ . . . . .	. . . . .	22
Father,	“ Mar. 22, 1839.	“ . . . . .	. . . . .	53
Third daughter—N——,	“ Apr. 30, 1840.	“ . . . . .	. . . . .	23
Fourth daughter—E——,	“ Oct. 4, 1840.	“ . . . . .	. . . . .	20
Eldest son—J——,	“ May 4, 1839.	“ . . . . .	. . . . .	15
Youngest son—E——,	“ Sep. 22, 1839.	“ . . . . .	. . . . .	2½
Youngest daughter—H——,	“ Sep. 22, 1855.	“ . . . . .	. . . . .	20

One son has died since, at a distance—I don't know the particulars. One son is still living, aged about forty. The son J—— is reported to have died of diabetes; all the rest, of consumption. N—— died at Hanover, N. H. H—— lived all but two or three of her earlier days in S. H, and died

* See answers to twentieth question.

there. I am told that the Rev. Doctor stated that his father's family were consumptive.

Mrs. L—D— had two sisters die of consumption, and two of cancer. Three of her own children have died of consumption. One brother of her husband has lost three children by the same disease. Another brother has lost two children by the same.

C—W—, an intemperate man, died of consumption. One or more sisters died of the same. He has lost at least four children in the same manner, one of whom had lived in Texas, one in Hadley, one in Northampton, and one in Chicago; the circumstances all being different as to occupation and mode of life. I am satisfied that the disease is decreasing. The town is much more dry, the food is of a better quality, and the people understand more fully the sanitary conditions essential to health.

I cannot but call attention to the excellent suggestions contained in the following remarks on the different influences affecting the Irish, in Ireland and in America.

Gavin.—Hereditary influence in causing phthisis is very far from being as common as medical writers would lead us to think. The majority of those who have come under my care were free from such cause. To those who are acquainted with the habits of the Irish, in their own country, as well as in America, there is much that deserves thought, and also throws light on one cause for phthisis, and points to the great importance of climatology. In Ireland, the peasantry live on diet principally made up of saccharine and fatty substances—potatoes and milk—while in this country, meat and bread form their principal diet. Again, in Ireland, the peasantry live in ill-built houses, but if they do, the doors are seldom closed, thereby insuring a good supply of pure air. Quite the contrary here—overcrowded tenement-houses, with small rooms opening into dark passage-ways, doubtful neighbors, and other things combined, oblige them to live with closed doors, so that ventilation is next to impossible. I am very much inclined to think that further investigation will show that the two agents above mentioned—radical change in diet and want of pure air—play a great share in producing phthisis amongst the Irish class of the community. In this respect I agree, to a certain extent, with Dr. W. McCormac, of Belfast, Ireland, who considers carbonized air the great factor in causing consumption.

The apparent good influence of alcoholic stimulants may be noticed in the following instance:—

Morse.—J—B—, a man of wealth and healthy family; residence could be called an eminently healthy one. He married Miss S—. The S.'s all had consumption. He had three sons and five daughters. All the sons and three daughters died of consumption. The eldest son (J. B., Jr.) married S—B—, whose mother died of consumption. S—B— died of consumption, and all her children, viz.: three daughters and one son, J. B., Jr., marries again, and before he died, begat a son, who, for many years was considered consumptive—had diseases of bones of face, fingers and hand, called *scrofulous*, which undoubtedly were *tubercular*, but by the use of concentrated nourishing food, pure air, and sunlight, he is now living, and apparently well. All medicines were dropped, and milk and brandy were substituted, when he began to gain, and his sores healed.

Hills.—Consumption seems to be caused, in some cases, by hereditary influences: by which I mean that consumption occurs in the children of parents that have died of consumption, or where the uncles or aunts have died of that disease. There are other cases where a parent has died of consumption, in which we find the children troubled with a scrofulous condition; such as enlarged glands, a puffy appearance of face, and sometimes of other parts of the body which does not seem to be firm flesh, or *adipose tissue*. My experience is too limited to be able to tell the result of such cases.

The following is analogous to statements already made above, in regard to the Irish in America:—

Huse.—As regards the development of phthisis, not from any hereditary taint, but apparently wholly from local causes I will cite the following:—A family of eight, the parents stout, athletic Irish people, with six children. At the date of my first acquaintance with them, March, 1866, they were all well, with but one exception. This was supposed to have been a cold, the result of suppressed menses from wet feet a month before. It was found to be a tubercular trouble, and proceeded to softening, and excavation in eleven weeks from the time of my first visit, when death ensued from phthisis. About the same time, a brother aged twenty-eight to thirty, consulted me, relative to cough: I found roughened respiration at the left top—no particular emaciation. I ordered cod-liver oil and whiskey, and advised him to leave town as soon as possible. One year later (1867) I examined the lungs of another daughter of the same family, and found tubercle and condensation of the top of the left lung so marked that there was no doubt in my mind as to the diagnosis and probable result. The brother went to Worcester; returned in 1869; came under my care and died in April, of dropsy, the result of chronic peritonitis with diarrhoea. The only child now at home is to all appearance healthy, but still has a marked resemblance to her deceased sister. Two remaining sons are in different parts of the country, location and health unknown. The parents are healthy Irish, living plainly, but substantially, on a farm.

Gould.—Happily consumption has almost deserted this town (Revere); there has not been a fatal case for years,—not since I wrote last upon this subject. Upon your first question I answer, Mrs. W—— died quite a number of years ago of consumption, between fifty and sixty years of age; her sister died at about the same age, and her brother died, aged sixty-three, of consumption. Mrs. W.'s daughter, M., married, died of pure tuberculosis of left lung, between her fortieth and fiftieth years. Mrs. W.'s son, R., had repeated attacks of hæmoptysis, and died after his thirtieth year. Another sister has been in a consumption for more than thirty years, and lives on. Her case is somewhat remarkable. For quite a number of years she has had repeated attacks of hæmorrhage, but instead of producing a debilitating effect, it relieves the oppression and soreness of the chest. She has been under my care for more than twenty years; uses no medicine, except an occasional dose of Morphia when the cough is too troublesome, also Tinct. Iodinæ, and occasionally blisters, after taking cold. She is married, and over fifty years of age. My care has consisted chiefly in attention to the digestive organs. She has lost one son, aged thirty, by this terrible disease, and has other children fairly candidates for the same affection. The cases I report look

very much like hereditary consumption. The taint may continue to affect the offspring of this family, unless stronger and purer blood be mingled with it. But I have, until recently, firmly believed that, unless there was an hereditary predisposition to the disease, neither exposure, manner of living, nor the habits of the individual, pneumonia, bronchitis, nor any other inflammatory affection of the respiratory organs, would have the slightest effect in producing it. But, within a few years, I have been somewhat shaken in this belief. I have met with several cases, and have one under my care,—a young man of eighteen, who has a good chest and broad shoulders, and who has all the rational and physical signs of confirmed phthisis, and yet there is no family taint. None of his ancestry on either side, nor any collateral branches of the family, ever died of consumption; but the maternal branch of the family were asthmatic. It was apparently brought on by exposure to cold, producing severe capillary bronchitis and engorgement of the lungs.

Rice.—I know that many cases of pulmonary phthisis in this vicinity can be traced to hereditary descent. Often it is traceable to the second and third generation back.

Wakefield.—No doubt upon the point, that where the parents (one or both) are affected with tuberculosis, the offsprings are sure to inherit the disease.

Hunt.—Hereditary predisposition and the scrofulous diathesis cause it.

Call.—Nearly every case I have seen has had a decided hereditary influence, although every child born of consumptive parents does not die of consumption. Almost every patient dying of consumption has had some near relative die of the disease.

Butler.—Of its always being traceable to hereditary causes I have some doubt, for I have known of cases where no hereditary predisposition could be traced.

Howe.—I believe consumption to be hereditary, and, also, the inherited tendency to be the predisposing cause; but I do not believe this cause of itself sufficient to produce a fatal result in nearly all who may have this cause operating in the system from birth. * * * * The tendency may remain dormant during life, unless other conditions favorable to the disease should arise.

SECOND QUESTION.

CAN CONSUMPTION APPARENTLY BE PREVENTED FROM OCCURRING IN CHILDREN, HEREDITARILY PREDISPOSED TO THE MALADY?

The tabular statement is as follows:—

Yes,	120
Can be retarded,	15
No,	20
Doubtful,	10
No reply,	45
Total,	210

On this question of the ability of the medical profession to do anything to prevent consumption from appearing in children hereditarily liable to it, there is evidently much less certainty on the part of our correspondents than is shown by them on the first question. Fifty-five (26.23 per cent.) are either doubtful, or return no answer. Twenty (9.52 per cent.) return a peremptory "nay," as if they had seen few, if any, cases in which, after all had been done to prevent consumption, complete success had been the result.

Doubtless, all physicians have seen cases similarly suggestive of doubt of their ability to ward off the tremendous influence of blood. Fifteen (7.14 per cent.) think not that it can be absolutely prevented, but that it can be retarded. And finally, one hundred and twenty (57.14 per cent.) declare that they believe that the disease can be, by proper means, prevented in those children who are hereditarily predisposed. What these means may be, we shall, perhaps, get a glimpse of under another question. Meanwhile, let us take courage from the fact that more than half of our correspondents do have some hope of being able, at times, to influence the stern rule of one natural law by pitting against it other of nature's equally powerful influences.

Extracts from our Correspondents' letters relative to this question.

Packard.—Although not prevented in one or two generations, it may be in a series of begettings.

Stone.—Attention, care, and change of residence may do much.

Parton.—I do not think plain "yes" or "no" are admissible answers to this question. My opinion is, that a child, hereditarily predisposed to consumption, may be so managed as to have the development of the hereditary taint retarded, but to be prevented, I doubt. Contracted and ill-ventilated apartments are often a cause, and should be avoided.

Blodgett.—I am not aware of any such case, but I believe that much may be done by a correct system of prophylaxis to retard its development.

Gilbert.—Not generally, but occasionally with those who are intelligent, and have means at their command.

THIRD QUESTION.

ARE THERE ANY SPECIAL MEANS THAT CAN BE USED TO PREVENT THE DEVELOPMENT OF CONSUMPTION IN CHILDREN HEREDITARILY DISPOSED?

The following is the tabular statement of "opinion" :—

By general hygienic measures,	24
By various specific directions, more or less elaborately described,	96
No means known to prevent it,	12
Doubtful,	5
No reply,	73
<hr/>	
Total,	210

The large number of physicians who, while answering our other questions, feel compelled to refuse any reply to this one, and those who are doubtful, and finally those who answer in the negative, that they know of no special means of warding off consumption in those hereditarily predisposed to it, making in all 90 (42.85 per cent.), presents of itself a decidedly disheartening result in reference to the power of the medical profession to prevent this terrible disease from developing itself, even when forewarned. It proves, however, one thing, viz. : that, in the opinion of a large body of physicians, other and more thoroughly radical measures must be tried than those heretofore employed, before we can hope to cope with the fate impending over the child born of consumptive parents. And on looking at the answers of those who give an affirmative reply, we find only one hundred and twenty, out of the two hundred and ten (57.14 per cent.), who think that they can succeed in preventing the disease from coming on. Upon those special means beyond a "general hygienic treatment," which 24 (11.43 per cent.) believe in, we must refer to the more detailed answers under this question. This is a sad result, but notwithstanding all this want of faith in our power to ward off the disease in an ill-begotten child, I cannot but hope that in the far future, when men will think carefully when choosing their residences in which they

intend to rear their future families ; and when a child is born, all the excellent hygienic laws that may be daily laid down for childhood and youth shall be fairly acted upon, every hour that the child is growing, and while youth is budding forth to manhood and womanhood ; when professions and all trades shall be chosen with reference to the health of those who are to pursue them ; when people learn that sun and air must freely bathe every part of a house ; when men and women shall believe that it is impossible to violate a single law of nature without more or less suffering of body or mind as a consequence of that error or deliberate crime against nature's laws ; when these halcyon days shall arrive, then we shall be better able to cope with this hereditary tendency, and, perhaps, shall then be able to crush it out. I think I have seen such cases where a discerning parent has warded off threatened disease, and has so reared a family that it has become even stronger than the average. He has done this, however, by commencing at their birth, and by constant, never-remitting care in reference to every influence which, during their tender years of growth, could have any deleterious effect upon their health. He believed that even one small error might sacrifice a life. His success, as I have stated, has been complete.

Extracts from our Correspondents' letters relative to this question.

Kingsbury.—Change of climate, living and occupation, together with alterative medicines.

Curtis.—Sunlight, air and muscular development.

Bowen.—Out-door life and change of climate.

Goodrich.—Plenty of pure air, light and out-door exercise.

Stone.—Change to dry and even climate, from Cape Cod to St. Paul, Minnesota.

Blodgett.—By a correct system of hygiene, avoiding all that tends to lower vitality.

Brown.—I am not aware of any that have proved successful in finally securing the systems of those who are hereditarily disposed. Its development may be, and often is, postponed for a time by careful management.

Nye.—Regular habits of living; dwelling on high and dry land; temperate habits; warm clothing; good food, at proper times, and which should be eaten in a proper manner, thereby keeping the digestive and assimilative organs in a healthy condition; and, lastly, by breathing good air by night as well as by day.

Chase.—Change of air, climate, diet and general hygiene.

Dickson.—Bathing regularly, careful selection of food, regularity of hours for sleep.

Hathaway.—Proper diet, clothing, habits, climate, &c.

Deane.—Change of residence, habits of life and mode of living.

Reynolds.—Not *special* but *general* measures, attention to the rules of health, avoiding causes mentioned in Nos. 9, 10, 11, 12, 17, 18, 19, 20 of the circular.

Tracy.—I am not quite sure that I understand fully the intent of question 3. I know of no *specifics*, but, at the same time, my impression is that each case calls for special means, according to the peculiar constitution or condition or circumstances of the individual. In some, change of climate; in others, the use of iron; in another, cod-liver oil; in another, alcoholic stimulants; in another, change of circumstances, &c., &c. *In all*, the use of those means which will tend to *health*, in both mind and body.

Chapin.—Judicious food, extra clothing, and removal from all local causes.

Adams.—In the predisposed, especial attention to all the *little* precautions; especially in dress.

Smith.—Life out-doors; dry place of residence; good food, air and clothing.

Nichols.—Active exercise in the open air; and all the means that have a tendency to develop and strengthen the physical powers.

Spofford.—Anything that preserves the general health. Be careful about colds, fevers, measles, coughs, &c.

Soule.—Change of location, in my opinion, has done more to prevent consumption in children of consumptive parents, than all other means combined. In all the cases of consumption occurring in Winthrop* since I have lived here, the disease came with the patient from other places; and in some instances, the patient has been very much benefited by the change, and I am by no means prepared to say that an earlier change of location would not have resulted in a complete recovery.

Stone.—Removal to another and healthy location; living, as much as possible, in the open air; sufficient out-door exercise; liberal diet, and general hygienic measures.

* It will be remembered that Winthrop enjoys an almost insular climate, being a peninsular promontory projecting far out into Massachusetts Bay.—H. I. B.

I draw especial attention to the remarks on ill-ventilated apartments in the following letters :—

Parker.—The principles of hygiene are especially to be attended to—cleanliness, warm clothing, good, nourishing food, well-ventilated apartments, a plenty of out-door, fair exercise of body and mind, but neither overtaken. A very frequent and powerful cause in developing, if not in actually causing, consumption, is, in my opinion, a contracted, ill-ventilated sleeping-apartment.

Burr.—By placing children under the most favorable hygienic influences; regulating their course of study, hours of play, diet and sleep, their sleeping-apartments. We must see that their rooms are well-ventilated, and that proper attention be given to dress. We should insist upon such children wearing three grades of flannel under-garments during the year,—*very thick* during the winter months, *medium* in spring and fall, and a *thin* grade during the summer, after the middle of June.

Calkins.—Dry and pure air, in *well-ventilated* buildings; nutritious food and ample clothing; out-door life; attention to the slightest attacks of indigestion; and by the use of those medicines best suited to the promotion of digestion and assimilation.

Shaw.—All those agencies which tend to elevate the vitality, as pure air, especially at night; cleanliness; a non-conductor next the skin; sunlight; plenty of nutritious food, especially lean meats and milk; and a chance to get into *clean dirt* in the country.

Heath.—Generous diet, warm clothing, pure air, and continued exercise in the open air, have apparently made a strong and healthy boy of my own child, whose mother had hemorrhage from the lungs during gestation, and died of tubercular consumption two and a half years after confinement.

Dwight.—In my judgment the disease may be prevented frequently, although perhaps not always, by attention to diet, exercise in open air, sunlight, and judicious clothing.

Breed.—Removal from crowded tenements in cities, to open air on Western farms. Ten or twelve examples.

Brown.—Principally inunction and attention to diet. Different oils have been used in my practice, generally olive-oil, oil of sweet almonds, or goose-oil. Particular attention has also been directed to the ventilation of sleeping-apartments, and warm clothing for the lower extremities.

Field.—Exercise out of doors; the breathing of pure air, day and night; wholesome food; and having a good time generally. Re-breathed air, in the young and old, lays the foundation of consumption more than any other cause.

Ward.—In answer to No. 3, I have written "No." In explanation, I wish to say I know of no *special means* by which to avert such result. Still I have

great faith in *general means*, i. e., the strict avoidance of all depressing influence, and the use of all available means of improving the general health and strength. This rule, I believe, should be borne in mind in all the stages of the disease, as a *preventive*, and also as a *cure*. I believe the disease to be one of debility, and promoted by every means or agency which induces debility. I judge this to be the explanation of the very rapid development of the disease after continued fevers, especially in persons predisposed to tubercular disease. I believe that this one principle, if generally practised, would save many cases (of all ages and conditions) now lost. I am very sure that tonics are the only appropriate treatment (iron especially) for all cases of consumptive disease. I base this opinion upon a pretty extensive use of the preparations of iron, and the results, as compared with any other plan I have yet heard of. Expectorants, although sometimes necessary, should not be relied upon, as is the case with too many, both in and out of the profession.

Seammell.—I know of no method of preventing consumption, except by that *kind of diet* and *mode of life* which, in each individual case, is best adapted to *promote vigor* and *increase tone*. I have seen cases where consumption was evidently *delayed* in its progress by such means, and I have no doubt it may be sometimes *prevented* in those hereditarily disposed. I suppose Dr. Bowditch remembers the case in the Massachusetts General Hospital, exhibited and described to the class by Dr. Jacob Bigelow, when I attended lectures, nearly thirty years since. The man was sixty years old, and had been in consumption forty years. During that long period the disease had been kept at bay by the patient's pursuit of *mackerel-fishing*, which agreed with him. Of course, the particular mode of life should differ in different cases.

Haskell.—I think the proportion of fatal cases much less at the present day than they were forty years ago, when I began practice, owing, I think, in a great measure, to the mode of treatment. *Then* it was customary, hereabouts, to use a spare diet and depleting medicines; *now*, nutritious food and stimulants. It does not confine itself to any trade or occupation.

Reynolds.—I suppose you wish opinions founded on observation. I have not known consumption apparently prevented in children hereditarily disposed to it, because I have never known means used purposely in due season. I think it might be often prevented by life in the open air, or by a change of climate, *before the disease was developed*. Such means are rarely resorted to until after symptoms are manifested. A sea-faring life, a life in the army, an agricultural life, especially in a climate little subject to change, are doubtless among the best means of prevention. Compression of the chest, in females, not only injures them and their female offspring, but their male offspring as well. Females with any tendency to consumption should avoid all compression of the chest from earliest childhood.

Downes.—While some of the medical faculty of our country send their consumptive patients to the West Indies, while other physicians send their patients to Russia, it will be well to suspend judgment until sufficient data are furnished. It would seem, however, that *in medias res* would be the most judicious. I have no doubt but that moderate out-of-door exercise in a dry, exhilarating atmosphere, like Minnesota, is of more advantage than medicine.

Rice.—I know of no positive means of preventing consumption in children who have inherited a scrofulous taint from their progenitors. Every means to invigorate the general health should be used,—such as a generous diet, pure air, exercise in the open air, warm clothing in winter, dwelling in a high and dry altitude, and, perhaps, the administration of iodine and iron. Also, the patient should not be made to study or occupy the mind in a degree to produce lassitude. I think the constitution can thus be somewhat modified, and perhaps, in some cases, the scrofulous taint completely annihilated.

French.—Children should be kept, if possible, from the contagion of the exanthemata (measles, scarlet fever, &c.), should always be dressed in flannel, take the open air, and as much sunshine as possible; the feet should always be kept dry. If they have eruptions, great care should be used in applying ointments and washes; it is apt to transfer it to the head or lungs. They should practise temperance in all things.

Smith.—I would answer, first, a selection of a mild, dry and healthy climate; second, constant exercise in the open air (I mean a vigorous, free exercise); third, a highly nutritious food, avoiding pork; fourth, daily application of cold water to the skin, with friction; fifth, the cultivation of a cheerful and happy disposition; sixth, avoidance of all excesses. In this section, atmospheric vicissitudes are the most exciting causes. I have seen many caused by syphilis.

Fiske.—It has been my opinion that a person predisposed to consumption by hereditary taint, &c., might do much to ward off, or entirely to avoid it, by being well clothed, and taking that kind of exercise, out of doors, which would invigorate the system; and, at night, by sleeping in a dry locality, away from water or low, marshy ground.

Winsor.—Regular and interesting exercise in the open air, and free admittance of fresh air to the dwelling; a regular, easy (but not indolent) life, with cheerful and congenial social relations; plenty of sleep, and of nourishing and palatable food; animal warmth maintained more by clothing, and less by heating apparatus, than is customary.

Barker.—By avoiding the common causes, and pursuing a hygienic course; by taking active exercise; by occupation; by being much in the open air; and by attending to the first appearance of the disease with appropriate medication.

Collamore.—I think consumption is prevented in those predisposed to it in some cases, but it is difficult to say how, unless we say, in general terms, by the use of means which conduce to general healthfulness. Hon. and Rev. M. A., called by Mr. Webster "the model farmer of Plymouth County," who died a year since at the advanced age of ninety-four years, was troubled with hæmoptysis when a young man, and was thought to have had diseased lungs. I do not know that any special means were employed in his case, but I do know that during his long life he was a model of propriety in eating, drinking and exercise; that he avoided excitement and late hours. I have in mind now a young lady whose life is being prolonged by removal to Minnesota. She is very strongly predisposed, and the disease had commenced before her removal, two years ago, but is now stayed. There seems to be a period, from sixteen to twenty-five, or thereabouts, that seems to be a critical one.

If by any means the person is wafted over this period his immunity is very much enhanced. About a year since I lost a patient, the last one of seven children, all of which, with one exception, had died with consumption. She was the only one that I had attended. The others had died in different places, but all young. Two of the others, as well as she, had borne children. In her case I think I kept the disease in check for more than a year, by the use of Savory and Moore's Pancreatic Emulsion. The old homestead is in a dry location.

Miner.—I have in mind one case where the hereditary predisposition was very great, the subject being Dr. A. M. O., of H——, whose mother, two or three sisters, and a brother, died of it, and who had hemorrhage from his lungs, followed by pneumonia, about twenty years ago. He took cod-liver oil very freely, and some stimulants, after his recovery from the pneumonia for two or three years, and kept at the practice of his profession, over high hills and rough roads, and *always at it*; I might almost say day and night. He is now strong and well, and nearly fifty years of age. I have thought that his business, keeping him so much in the open air, and the oil and generous diet, with the care he has always taken to keep himself well protected by warm clothing at night and when the weather was severe, have been the means of warding it off. I have other cases of a similar character, and where the same medication and *exercise in the open air*, especially *horseback-riding*, have done much to prevent what otherwise seemed incurable. I have more faith in horseback-riding than in any other form of out-door exercise.

Wilcox.—Such means as are calculated to promote general health, and especially, a good appetite. I have a case under observation for the past year, in which there was positive evidence of tuberculosis developed in the upper portion of the right lung, in which there has been most marked improvement, though I will not yet say it is *perfectly cured* (a boy now sixteen years of age); by taking him out of school; by daily out-door exposure (except in the most inclement weather), and by making it a point that this exposure should, whether as an occupation or recreation have an object aside from the fact of its being for health. Added to this, he has taken, during the year, three bottles of Nichols' sirup of the hypophosphites of lime, soda, potash and iron.

Metcalf.—I think a permanent residence in a warmer climate, before the development, to any extent, of tubercle, has apparently prevented the occurrence of consumption in children hereditarily disposed. In a family in this town, of six children, all but one died of consumption, before arriving at middle life. He removed to New Orleans, and has constantly, except an occasional visit to New England, remained in the States of Louisiana and Mississippi. He has always enjoyed good health and never had any pulmonary troubles. I know "one swallow does not make it summer," but you will take my case for what it is worth.

Knight.—Clothing, diet, exercise; also, elevated location, with soft water.

Wilmarth.—The special means for prevention, I should divide under three heads; viz., *diet, clothing and hygienic influences*. We frequently find that children hereditarily disposed to consumption are undeveloped, physically; while the nervous system is unduly active, showing a precocity. This con-

dition, if encouraged or allowed to continue, undermines the constitution, and impoverishes the health, by using the material through nervous activity, that should go to the growth of the body. A *diet* for such condition should supply the waste and build up the body. The supply of waste will best be accomplished by the articles containing more or less phosphorus, such as wheat (not flour), beans, fish, &c.; while the growth of the body requires, in addition to these, the albuminous, carbonaceous and fibrinous compounds such as we find in meat, eggs, milk, corn and vegetables. In choosing a diet, reference should be had to the condition of the bowels, which we often find in a constipated state. This should not be allowed, without a persistent, constant and untiring effort to overcome it. Avoid pastry and food that can be swallowed whole. Choose the food that will need *chewing*, and *chew it thoroughly*. Take plenty of time to eat, and eat at regular intervals. Fruit and berries may be used with the meals to advantage, the acidity of them moistening the fecal matter; and the small seed and skin promoting the peristaltic action of the bowels. Avoid much drink with meals, as it tends to wash down the food before it is properly masticated. Let supper be the lightest meal of the day, so that the stomach will not be obliged to work during sleep. Encourage the habit of daily evacuation. Perseverance in these matters will usually overcome the constipated habit, if other hygienic measures are brought to bear at the same time. Cathartics should *not* be depended upon to relieve the condition; they are only temporary in their action.

The *clothing* should be neither burdensome nor scanty, but should be both light and warm. It should not be a ready conductor of heat, thereby causing the wearer to feel changes of temperature unpleasantly. Light woollen garments are more comfortable to the wearer, in this respect, than cotton, and I think, more conducive to health. Protect the extremities. Tight-fitting garments are neither comfortable nor healthful, and tight-lacing about the chest is positively injurious and ought to be discarded. Too much dressing about the neck is as injurious as too little. The practice of constantly wearing a hairy fur or woollen tippet, keeps the neck in a state of perspiration, and a person is thus always liable to take a cold,—to settle in the throat and produce irritation, with cough. *Hygienic influences*.—Under this head I would include *air, exercise, sleep, restraint of injurious tendencies and the promotion of a healthy physical growth*. The *air* should be pure, free from the influences of low lands or stagnant water, or impurities of decaying animal or vegetable substances; and it should be what is called a dry atmosphere. Such an air should be breathed freely, out of doors. Exercise, such as the system will bear without undue fatigue, should be taken *every day*. Special attention should be given to the healthy growth and enlargement of the chest and of the muscular system generally. A judicious use of calisthenic exercises would be very beneficial. *Sleep* should be encouraged in the *early part of the night*. If children are kept up late, it is at the expense of the nervous system, and the morning sleep does not fully compensate for the loss. *Occupation* of such children, until they are seven or eight years old, should be very light, mentally, with just enough physical employment to keep them out of mischief. It is better that they should not go to school before this age, and when they do go, the mental effort should be restricted to the physical capacity. I do not mean by this, to encourage habits of laziness, but to avoid what is too often the case, *pushing* a forward child. In choosing an occupation for after-life, one should be taken that avoids sedentary habits or close confinement. Trades where fine dust is a

necessary attendant, should be avoided. *Injurious tendencies* are those which in any way weaken the constitution; such as overwork, overstudy, too much play, excess of any kind, frequent or continued excitement. Anything which calls for an outlay of nervous force more than is conducive to health, should be restrained. Work, study, play and the excitement necessarily attending them, are healthful and needed to properly develop the system, and should be encouraged with alternations of rest, so that a healthy reaction, not an exhaustive fatigue, may follow.

Gilbert.—A healthy location; proper food, clothing and exercise; and regular habits.

Parsons.—Diet, climate and voluntary expansion of chest.

Rice.—I know of no means of preventing it, in children of consumptive progenitors; or, at least, no means other than those used to invigorate the general health.

Wakefield.—Children who are clad in flannel; fed upon beef, mutton, etc., instead of pork; well guarded against sudden changes in temperature, may apparently, escape tuberculosis. An exciting cause, e. g. pneumonia, may develop the latent disease.

Hammond.—The special means of preventing the disease in children, are those which tend to produce a healthy and vigorous action of all the organs of the body. This can be done by proper exercise, taken when the body is not exposed to any improper state of the atmosphere, either of cold or dampness. Exercise in the open air, when the temperature is too low, or when there is much dampness, is not proper. The condition of the system when the person takes the exercise, should be taken into account. If the system is exhausted, in a measure, the exercise should be performed with caution. The clothing should be suited to the season; the diet nutritious. In fact, whatever tends to render the system active and vigorous, also tends to protect the body from all predisposition to disease.

Haskell, of S., Me., says (communication received too late to be used in the general analysis),—

- a. By good nourishing food, largely animal.
- b. By abstaining from alcohol and tobacco, especially the latter.
- c. By abstaining from inordinate indulgence of animal appetites.
- d. By the use of flannels, (if in New England) the year round, to chest, legs, and arms.
- e. By residence in a dry climate, of high latitude.
- f. By leaving home, and the cares of home, once or twice in a year, especially if they go from "the shore," inland.

This last clause (*f*) applies, in my experience, grandly, in the treatment of consumption. By this course, and by the use of clams, oysters, fish, etc., and cod-liver oil, and porter, whiskey and hot flax-seed tea, etc., with an inhalant mixture, life has been made more comfortable and prolonged.

Abell.—To prevent the development of the disease in children, there should be extra care in guarding against exposure to wet, and chills, by attention to clothing; by using plentiful nutrition; and by keeping the

digestive system in good order; rather than by any specific drugs; and by encouraging exercise in the open air, in such systematic ways as would develop muscle, and expand all the air-cells of the lungs, thereby leaving as little soil as possible, for the development of the causes of tubercle; but that any means would entirely prevent the development of those causes, occurring at, or before birth, I am not so positive. I have examined the lungs of infants, dying with other diseases, at the ages of four or six months, whose lungs were studded throughout with minute tubercles. I think change of climate might effect a good deal, in preventing tubercular development, as I have known severe cases to recover, after two years' residence in Minnesota—both first and second stages—though I think the benefits claimed by residing in Minnesota, overrated—but I know many families who were apparently predisposed to consumption while living in New England, whose children almost *never* had phthisis developed in Minnesota. There is certainly quite a difference in the atmosphere, in some way, as I found I could myself bear twice the exposure, in Minnesota as in New England, without taking cold. My wife, also, who has been severely attacked with "hay-fever,"* for the last fifteen years, (beginning in the latter part of August, and lasting from six weeks to three months,) whenever she visits Minnesota, escapes the attack invariably, and breathes as freely as anybody. On returning to Massachusetts the attack comes on again. She tried this experiment three times, with the same result.

Luce.—In a family of seven, four boys and three girls, all the girls and two of the boys died of consumption, under the age of twenty-five. The two remaining boys were the youngest of the family; the eldest of these began to manifest symptoms of the disease, and embarked for California, where he recovered, and is now strong and healthy. The youngest is still at home, but in feeble health. The father of this family, is a farmer and fisherman, and is now seventy-two, hale and sound; the mother sprung from a consumptive family, and died in middle life.

Butler.—By attention to diet and general habits of life; by change of location and climate, if one or both should seem to promote the disease; outdoor exercise, such as shall tend to expand the chest, and give full, free play to the lungs.

Hartwell.—The especial means to be used for the prevention of consumption in children hereditarily disposed, besides a strict observation of all hygienic laws, are, *if the mother is affected*, the employment of a healthy nurse who shall have the whole care of the child, or, if one cannot be obtained, a healthy woman, who shall feed the child with cow's milk, properly diluted. When milk, drawn from one cow, well-known to the family, is not to be had, Comstock's Food, (Liebig's formula) has been used by me, in two cases, and both thrived remarkably well. *If the father is affected*, the mother may nurse the child, but ought not to have the father under her charge or care, at the same time. Second, and as important, I think, is the separation of parent

* "Catarrhus Autumnalis" would be, I think, the more correct term, according to the recent admirable researches of Dr. Morrill Wyman, on that very distressing malady.

Autumnal Catarrh (Hay-Fever), with three maps, by Morrill Wyman, M. D., late Hersey Professor of the Theory and Practice of Medicine in Harvard University. New York: Hurd and Houghton. Riverside Press. Cambridge, 1872.

and child. (I cannot say that I think we are warranted in making the separation forcible.) If proper ventilation could be enforced, occupying the same house would not be objectionable; but that is almost impossible. This applies to children also, and some of the difficulties are removed. Of course, the various tonic remedies are not to be omitted, of which the best is cod-liver oil, if any tendency to emaciation exists.

Holmes.—Warm flannel clothing; fresh meat, butter, milk and eggs, diet; out-of-door exercise in high and dry location; with pure air, erect position, with free and full expansion of the chest, are among the best means of prevention.

Hills.—A case of mine had Pott's Disease, and while under treatment pulmonary tuberculosis was developed. I do not think an abscess of the vertebra opened into the pulmonary tissue, although the child previously had an abscess which pointed a little anterior to the large trochanter. The child wasted quite rapidly, had severe cough, and profuse expectoration of thick grayish and yellowish sputa. The child took iodide of lime, and, some of the time, a sirup of the hypophosphites, but most of the time cod-liver oil and some expectorant. In the spring and early summer he began to improve, and by fall was quite fat and hearty; cough continued, but less severe. Improvement lasted, without relapse, until April, 1871, when the child was taken with diphtheritic croup, and died after two days' illness. In this case I think the tuberculous symptoms were evidently abated, and I was led to hope for complete recovery, had the patient not died of another disease. And here I will state that this child took exercise in the open air whenever the weather permitted it; also ate largely of sugar, and I think, drank milk freely. At the time of death it was four years seven and a half months old.

A case came to my knowledge where the mother died of consumption soon after the birth of a daughter. I do not know that that child had any appearance of disease, but the father determined she should have a chance to be robust, so he had the child well and warmly clad, thoroughly protected from the vicissitudes of the weather, and then sent her forth, at all times, and in all kinds of weather. At the present time (unless recently indisposed), the young lady (of seventeen, I presume) is, to all appearance, in perfect health. I cannot answer whether consumption will assail her in later years, but it is my opinion that without the physical training she went through, she would now be suffering from incipient phthisis.

Harlow.—I desire to instance a family consisting of father, mother and four children, two males and two females, in which the parents both died of phthisis fifteen years since. The children were supposed to inherit the tendency to tuberculosis, were separated, placed in good families, locality changed, regular systematic hygienic rules were enforced in each case. All have arrived at mature age and are now in robust health, though one of the girls gave signs of incipient pulmonary trouble nearly three years since, which soon disappeared upon making a radical change in her mode of life, viz., removing her from school and keeping her much out of doors.

Call.—Change of climate and change of associations are among the best preventives of the disease in question.

Aiken.—The best hygienic conditions, such as in infancy, "plenty of milk, plenty of sleep, plenty of flannel!" Later, a country life, especially in the

summer; plain, but nourishing food, brown bread or its equivalent at least once a day; regular habits generally.

Haynes.—Diet; exercise; location; judicious use of such articles of food and drink as will promote the development of bone and muscle.

Spalding.—No specifics, but such general treatment as will promote sound physical health.

Carbee.—First, attention to diet; second, avoid exposure, either riding or driving, in open air; third, administration of suitable tonics whenever indicated.

Bullard.—Removal from consumptive family; out-door employment and nourishing diet; also removal to another State, as going West.

Carr.—Temperance, air, exercise in open air, avoiding all manner of debilitating practices of body or mind, favorable location, etc.

McCullom.—Out-door exercise, sleeping-apartments well ventilated, plain, nutritious diet, cleanliness, proper clothing, eight or ten hours' sleep.

Fairman.—Large, well-ventilated sleeping-apartments, plenty of exercise in open air, journeying, especially on horseback, good, wholesome diet, freedom from care, attention to the general health, avoidance of cold, wet, damp, and exposed localities.

Ranney.—I am sorry to say, after a practice of twenty-five years, and observing cases treated and not treated, that answers to your questions must mainly be conjectural, and, consequently, of little value. The conclusion to which I have come is this: tuberculosis results from a peculiarly depraved condition of the system, generally hereditary. If otherwise, and the predisposition not transmitted, there is not sufficient evidence to establish proof of *cause*. Until the cause is ascertained, the way of prevention or promotion seems to me very *dark* and *blind*. Conclusion,—a glorious uncertainty about the whole matter contained in the questions.

Richmond.—Free, timely, and proper exercise in a pure atmosphere. Special attention should be paid to the digestive organs, or blood-making machinery, that the greatest possible amount of good, wholesome food may be converted into blood; and all condiments (stimulating) be avoided. *Tobacco, the greatest bane to human kind*, from its enervating power, is to be avoided in every form *by all means*. *Porter*, more than any article in my practice, prepares the digestive organs for nourishment, and guards the system against tuberculosis.

Mayo.—Change of climate.

Bolan.—I think cod-liver oil, with a constant and small dose of liquor, will retard the disease, and at times, produce a cure. I have seen a few children recover when one lung was entirely diseased.

Lincoln.—Let the child, in infancy, receive its nourishment from a healthy nurse, free from any hereditary taint; a strict attention to cleanliness, keep in a moderate temperature, a sufficient quantity of clothing, pure air and sunlight. Let it sleep with a healthy, but not old, person. In childhood give it healthful, but not too violent exercise, so as not to prostrate those weak powers, but rather to invigorate and strengthen. If the patient is in a state of perspiration do not check it too suddenly. The brain should not be overtaken while the physical powers are weak. There should be an entire abstinence from any of those indulgencies which are so antagonistic to nature. It is our conviction that, by a strict adherence to these prophylactics, there is a possible escape from the terrible scourge which cuts down so many of the human race.

Sanborn.—Moderate exercise daily, regular habits, such as regularity in eating, drinking, sleeping, and attending to calls of nature, dressing properly, not wearing clothes so close as to punish and disfigure the person, amusements, generous diet, change of location or climate, and keeping in the open air as much as possible when the weather is suitable. A change of climate I consider almost absolutely necessary, and, in the majority of cases, indispensable. Also amusements,—everything which tends to cheerfulness of a moral character.

Robbins.—1st. Residence in the country. 2d. Attention to diet: food to be taken at least four times a day, till ten years old, which is to be largely animal—especially milk; sugar not to be rejected, but largely and judiciously used, as taking the place of fat in adult life. 3d. Bathing, almost daily, with frequent change of clothing. 4th. Constant out-door life. Such children by *no means to be sent to public schools*. Body before mind. Make romps of them rather than precocious prigs.

Bromwell.—Extraordinary attention to general health.

Eldredge.—I believe consumption to be decidedly hereditary, and that where there is this tendency life may be prolonged by generous living, residing in a favorable locality, having regard to drainage and exposure rather than to temperature; always sleeping in an upper chamber; and by avoiding harassing care and hard labor of every kind.

Collins.—Good air, food, residence, surroundings, and everything that goes to make a perfect animal.

Peaslee.—Hygienic means, especially out-of-door occupation.

Condie.—I have seen cases in which children, male and female, strongly predisposed by hereditary taint to tubercular phthisis, have had the disease arrested, or, more properly speaking, have been saved from a development of the disease, by a proper hygienic course of treatment, including diet and regimen, especially when pursued in conjunction with a complete change of climate—from one marked by dampness and rapid transition of temperature to an elevated, dry, inland situation with an equable temperature. Even in adult life, I have known pulmonary tuberculosis, after it was actually com-

menced, arrested in its course by the above means. In one instance—that of a man named K—, some thirty-eight years of age—a saddler by trade, laboring under tuberculization of the lungs, at my advice, changed his occupation to that of drayman. This calling he pursued uninterruptedly for about six years, and affected an *entire cure*, as, after a very close examination, I verily believe to be the case.

Murchison.—Good nourishment, and removal to a *dry* climate of equable temperature. Since I had the pleasure of meeting Dr. Bowditch in London, more than fifteen years ago, when he demonstrated his views to a meeting of the London Medical Society of Observation, held at my house, I have been satisfied of their soundness, and for many years I have taught them annually in my lectures.

Plimpton.—Dry locality and fat meat.

Bennet.—Hygiene, and country life.

Snow.—Warm clothing, especially of the chest, arms, legs, and feet, in infancy, childhood and early youth, particularly in females; good food; a large amount of out-door exercise; little brain-labor before fourteen years of age; a general observance of the laws of health, and no “dosing.”

Blanchard.—By keeping the digestive and assimilative organs in a healthy condition, and avoiding those causes which produce a certain inflammatory condition of the lung tissue, which *almost* invariably results in the deposition of tubercle.

Smith.—(a) Proper food, which should consist largely of milk; as the proportion of milk is diminished, animal fats must be taken in other forms; also vegetable oils, in the form of nuts. Beef, mutton, fowl and fish, so varied as always to be relished. Fruit and vegetables, in variety and abundance. *Unbolted cereals* in proper quantities. (b) Proper clothing, with particular attention to the temperature of the extremities, both sleeping and waking. (c) Sufficient opportunity for sunlight and fresh air, with exercise. (d) Plenty of sleep, in large, dry, and well-ventilated apartments. (e) Avoidance of excitement, fatigue, and exposure to any depressing influences. (f) When the child is well fed and cared for in other matters of hygiene, there is little to be done in the way of medication; but I have thought that the Tr. Ferri Chloridi, largely diluted with the sirup of sugar, and taken after the meals, for a period of one or two weeks at a time, with like intervals, one of the best medicinal agents to use.

Fisher.—Frequent change of residence; selection of healthy locations on dry, porous soil; in unshaded houses; sleeping apartments ample, *well ventilated*, in second or third story, admitting sunlight freely; with the greater part of daylight spent in the open air; in moderate and judicious exercise; and with the observance of the well-established hygienic laws, as regards clothing, diet, mental emotions, &c. An observation of twenty years gives

me the fullest conviction that quite a number whom I have now in mind, and who at this time are enjoying tolerable, if not robust, health, would have long ago filled consumptives' graves, but for precautionary measures, including those enumerated above, which, by advice, they have observed in a greater or less degree. Some of these had only strong predisposition; others had actual tubercular deposition, with all the usual symptoms of incipient phthisis, lasting from three to fifteen months, and having added, in the latter number, the physical condition of confirmed consumption. I must admit, however, that some cases which seemed as favorable for recovery as these now living, and observing the same hygienic influences, have succumbed within two or three years from the first attack. Nevertheless, I have not the slightest doubt that a great number may be saved.

Howe.—First of all, the hygiene of the system claims our attention. This is mainly comprised in four things—clothing, rest, exercise and diet. The person should wear flannels next the skin, throughout; he should observe perfect regularity with regard to the remaining three; should retire and rise early; should take plenty of exercise in the open air, always remembering to be suitably clad.

An out-door employment should always be preferred for one having a tuberculous diathesis. The diet should be thoroughly substantial, nutritious, and easily digestible. Excess in eating, as in exercise, should be avoided.

The above, I consider first in importance; but secondly, what can we do by way of medication?

Cod-liver oil has proved more efficacious in my hands than all else. I can refer to cases which presented marked symptoms of tuberculosis, which came up, under its *persevering* use. By *persevering*, I mean six, twelve, eighteen months, or more. Many fail in obtaining the desired effect because they do not continue the remedy long enough.

FOURTH QUESTION.

This question, and the subsequent ones, up to and including number eight, were suggested in order to meet the absorbing interest which we all have in the terrible evil of intemperance. Doubtless, in the estimation of many readers, some of these questions may seem useless, or perhaps absurd; and the results may seem equally futile, in the estimation of others. But, as I consulted brevity, in order to get any answers, I hope that all captious indifference, or opposition, will rest while we try to arrive at some results, however small, towards the elucidation of this subject of such importance to the future health, morality and intellect of the people of Massachusetts.

IS CONSUMPTION CAUSED, OR PROMOTED, BY THE DRUNKENNESS OF PARENTS?

The documents allow of the following table:—

	Yes.	Yes; by depriving children of comforts, &c.	No.	Doubtful.	No reply.	Totals.
In Massachusetts, . . .	63	3	33	18	26	143
Outside of Massachusetts, . . .	37	6	11	1	12	67
	100	9	44	19	38	210

I confess to a feeling of surprise when considering this table. I had supposed that medical opinion would be more unanimous in its condemnation of intemperance in parents, because of its effect upon the offspring, and its tendency to cause consumption. But it would seem that drunkenness, amid the many horrors that it entails upon the offspring, does not, in the minds of a great many of the profession, tend to cause consumption. Out of our two hundred and ten correspondents, only one hundred and nine (51.43 per cent.) answer in the affirmative, viz., that they believe drunken parents bring consumption upon the children. One hundred and one (48.09 per cent.), on the contrary, take either the negative, or are doubtful, or decline to answer.

There is another rather curious result of the above table which, as prepared, shows the number of correspondents in and out of the State. It is this, viz.: that in Massachusetts there is less belief in the power of intoxication to cause the begetting and rearing of consumptive children than there is out of the State. This is shown by the different proportions of affirmative answers, in the two, viz.: 64.18 per cent. of those outside of the State, to 46.15 per cent. from Massachusetts. Moreover, there seems less doubt about the question, among physicians outside, than among those resident within the State. We cannot, of course, draw positive conclusions from such small numbers. Nevertheless, this seems to me a singular result, when I remember that here in Massachusetts,

discussion on the evil results of intemperance have been going on for so many years; and, in which State, therefore, one must believe that the results of intemperance must have been brought to the notice of the profession and the public as much, at least, as elsewhere.

Extracts from Correspondents' letters upon this question.

Reynolds.—Yes, by producing feeble offspring.

Hammond.—Drunkenness of parents deprives children of the comforts of life—often, of proper covering for their bodies, of proper food, or lodging, and thus their vital energies are exhausted, and any disease is liable to develop itself.

Jordan.—I have never seen a parent who drank to excess who did not have consumptive children.

Hunt.—A drunken parentage is a cause.

Fiske.—No, no further than surrounding circumstances bear upon the case.

Dwight.—Sometimes, by neglect and bad food.

Gavin.—Yes, especially when the *mother* is a drunkard.

Holmes.—No, except by the neglect it causes.

Richmond.—Some cases may be found where poverty may cause too close confinement and a lack of suitable nourishment, where it may be a cause.

Harris.—By defective organization and impaired vitality.

Fisher.—I cannot say I have known cases where drunkenness has *directly* caused consumption by the effects of liquor on the system. Cases of phthisis occurring in the progeny of drunkards are so constantly preceded by poverty, neglect, exposure and violations of the laws of health that it would be difficult to determine what agency drunkenness had in causation, otherwise than in producing the circumstances under which they occurred. In a few cases the children of drunkards, or of those addicted to the excessive use of ardent spirits, without positive intoxication, and in comfortable circumstances, I have been able to satisfy myself that the disease was due to other causes.

FIFTH QUESTION.

IS CONSUMPTION CAUSED OR PROMOTED BY THE DRUNKENNESS OF AN INDIVIDUAL?

On this question there seems a great diversity of opinion. The table is as follows:—

	Yes.	Yes; as secondary to gastric, etc., troubles.	No.	Doubtful.	Unanswered.	Totals.
From Massachusetts,	71	5	30	13	24	143
Out of " "	38	3	17	-	9	67
	109	8	47	13	33	210

Thirty-three (15.71 per cent.) decline to answer the question; thirteen (6.19 per cent.) are doubtful; forty-seven (22.38 per cent.) say "no," while one hundred and nine (51.90 per cent.) of the two hundred and ten correspondents answer decidedly in the affirmative, and eight say that the disease occurs in consequence of the disturbance caused in the stomach and digestion by the beastly habit of intemperance.

The question, undoubtedly, is a difficult one; meanwhile, it cannot be said that medical opinion, as tested by this correspondence, sustains the idea that consumption necessarily is caused or promoted by intemperance in the use of alcohol. Meanwhile, some very singular coincidences, to say the least, arise, in which consumptive tendencies seem to disappear with a really intemperate use of liquor, a reference to some of which will be found under next question.

Extracts from Correspondents' letters upon this question.

Burr.—In cases of consumption in the intemperate, probably drunkenness was the secondary cause.

Parker.—In all cases of tubercular consumption of the lungs in drunkards, which I can now recollect, that disease seemed to be developed secondarily to disease of the liver, or stomach, or both.

Winsor.—When superintendent at Rainsford Quarantine Hospital I had quite a number of cases of phthisis in the wards, where the habits were drunken, and where it could not be doubted that the disease advanced faster on this account. But there was scarcely one not acted on when out of hospital, by all manner of other depressing and warping conditions, so that it would have been impossible to separate and analyze the parts played by each in developing and advancing the disease.

Barker.—Bronchial consumption sometimes takes place when the general strength and digestive system are broken down by drinking.

Hills.—I have a patient now, in whom I believe phthisis has been promoted by the excessive use of intoxicating drinks. This case seems to be ameliorated by the use of cod-liver oil, two parts, and Tinct. Cinchona Co., one part, (the dose being one tablespoonful,) but whether the disease will be arrested remains to be seen. An expectorant also is being used in this case, but no stimulant other than the cinchona.*

Wakefield.—I had a patient several years since, a soldier in the Mexican war, very dissolute. I treated him for fractured patella and mania a potu at the same time. He was an habitual drunkard. He finally had a severe attack of hæmoptysis, and died of rapid consumption. This, I think, might have been prevented by sobriety and good food.

Hunt.—In my judgment the most potent causes are the drinking customs of the community, and the prevalent use of intoxicating liquors as beverages.

Clary.—I cannot give an opinion respecting the influence of alcohol, except that I believe that all depressing influences, whether physical or moral, tend to its development, drunkenness amongst the rest.

Watson.—I do not recollect an instance of consumption in an habitual drunkard.

Palmer.—Yes; by inducing inflammation.

SIXTH QUESTION.

IS CONSUMPTION PREVENTED BY THE DRUNKENNESS OF AN INDIVIDUAL? In other words, IS A DRUNKARD LESS LIABLE THAN OTHERS TO CONSUMPTION?

On this question we have sufficiently curious results. The tabular statement is as follows:—

	Yes.	In some cases checked or retarded.	No.	Doubtful.	Unanswered.	Totals.
Reports from Massachusetts, . . .	21	3	72	16	31	143
Reports from other places, . . .	6	4	41	1	15	67
	27	7	113	17	46	210

Forty-six (21.90 per cent.) decline to answer; seventeen (8.09 per cent.) doubt; one hundred and thirteen (53.80 per

* But this cinchona tincture is medicated alcohol.

cent.) answer in the negative; whereas twenty-seven (12.86 per cent.) answer "Yes," and seven (3.00 per cent.) say that consumption is retarded.

In the present state of public opinion in regard to the use of intoxicating drink it requires some moral courage to say anything in favor of alcohol. To declare that it sometimes seems to save the drunkard from the consumption to which he is hereditarily predisposed, requires not only moral courage, but a sincere conviction of the truth of the assertion made. The fact, also, that only a little more than one-half (53.80 per cent.) declare that the disease is not prevented by drunkenness is a small proportion, provided the profession generally hold that the opposite opinion is the correct one.

Meanwhile there have been some very peculiar examples in certain families, which seem to indicate that intemperance, bad as it is at any time, does nevertheless in certain cases apparently have some good effect in warding off consumption, for in these instances the only persons that have escaped out of entire families were the one or two who indulged inordinately in the use of spirituous liquors.

Perhaps one of the most curious documents supporting the idea that intoxication with ardent spirits tends at times to prevent consumption may be found in the letter from Theodore Parker to the chairman of the Board, written in 1858, in which he gives details of his own family history. Mr. Parker had no doubts about the matter, and in that letter expresses the belief that "intemperate habits (where a man drinks a pure, though coarse and fiery liquor, like New England rum) tend to check the consumptive tendency, though the drunkard who escapes may transmit the fatal seed to his children."* I will add that I have no doubt that, by the wretched constitution the drunkard usually entails upon his offspring, that seed is much more likely to spring into life than in the robust begetting of the temperate and healthy.

It is evident that the question is still a debatable one, to be decided by a more careful study of more facts.

* Appendix, page 515, vol. 2, "Life and Correspondence of Theodore Parker," by John Weiss; New York, 1864.

Extracts from Correspondents' letters on this subject.

Smith.—Think I have seen life prolonged by it; no definite facts.

Spofford.—They, i. e. drunkards, sometimes live to old age.

Reynolds.—Father and some children died of phthisis. Three sons became "free livers," and still live, strong and stout.

Parker.—Yes; by moderate use of alcoholic stimulants; not to the extent of drunkenness.

The following is a very significant, if sad, case:—

Blodgett.—I have in mind an individual who seems to have warded off tuberculosis by a long-continued debauch. There seems to have been a cessation of tubercular activity from that time onward. When the individual, by virtue of his inherent manhood, ceases for a time to use alcoholics, tubercular activity sets in. The connection between the two seems in this instance to be certain.

Gilbert.—The progress of some cases may be checked by the moderate use of stimulants.

French.—From an experience of twenty-six years, I do not believe that alcohol causes or prevents consumption. This disease has been diminishing in this part of the State, especially in Warwick and Royalston, Mass., Richmond and Winchester, N. H., towns in which I have practised more or less for the past twenty years, and in that time there has been a great reformation in temperance. In Warwick, in a mortality of thirteen, for the last seven and a half months, there was but one case of consumption. It is hilly and dry; no swamps, no stagnant water, no nuisances of any kind; people remarkably temperate.

Howe.—I do not think drunkenness in itself really injurious to the consumptive; the other vices, which are usually associated with it, are. If we could have the former without the latter, alcohol might frequently be beneficial.

Butler.—Does this involve the free use of whiskey and other stimulants in the treatment of consumption? If so, I answer no; for, in my opinion, no case of consumption, hereditary in its nature, was ever cured or essentially benefited by the free use of stimulants. An unnatural excitement may be produced, which may be mistaken for returning health, but it is only awakening hope to be ultimately disappointed.

Abell.—I should be sorry to be understood as recommending drunkenness as a cure. But I have known several instances where nearly all the family, from five to nine children have successively died of phthisis. Finally, one of the boys, from sheer desperation, took to excessive drinking of alcoholic stimulants. These boys are now past middle life, and enjoying good health when last heard from. In two families, not less than five or six victims in each were carried off by consumption. In each there was always one sick, and a short time before death another would be prostrated. In one family

they resorted to that horrible relic of superstition, the burning of the heart, etc., of the *dead*, and the ashes were swallowed by the survivors, in the hope that the fatal demon would be exorcised from the family, but it did not avail. But another son fell a victim; and then the alcoholic treatment was tried, not as an expected remedy, but as a means of forgetfulness of impending doom, and no deaths in the family have to my knowledge since occurred.

Rice.—I believe the moderate use of liquors, by persons of a consumptive habit, to be a means of preventing the disease. I have known intemperate people die of consumption, but cannot say that the disease was hastened to a fatal termination by the habit.

Richmond.—There are some cases in the country where poverty might beneficially modify the diet, and compel the child to take a more active course of life, and make him more healthy than would be the case in affluence. In other words, poverty, growing out of drunkenness, might reduce the family to a plainer mode of living; compel its members to adopt a more active life; and thus improve their physical well-being, though they may be predisposed to consumption.

Carr.—Not unless one dies of drunkenness, before consumption develops itself.

McKenzie.—Very rarely is phthisis found amongst drunkards.

Smith.—Consumption is not *prevented* by drunkenness, but may be influenced beneficially, in severe cases, by a free use of spirituous and malt liquors.

Twitchell.—I know that I differ from many, but I am satisfied from my experience that I am right. I never knew a person cured or his life prolonged when in a consumption by the use of alcoholic spirits; but in several instances have known it—consumption—caused by alcohol itself, or by the effects of poverty and exposure, which are often attendant upon persons who largely indulge in alcoholic drinks.

SEVENTH QUESTION.

IS CONSUMPTION PREVENTED BY TOTAL ABSTINENCE ON THE PART OF AN INDIVIDUAL? IN OTHER WORDS, WILL TOTAL ABSTINENCE SAVE A MAN FROM CONSUMPTION?

The table stands thus:—

	Yes.	Retarded.	No.	Doubtful.	Unanswered.	Totals.
Returns from Massachusetts,	25	1	58	19	40	143
Returns from outside of Massachusetts,	13	4	31	3	16	67
	38	5	89	22	56	210

Thus we see that nearly one-half (42.38 per cent.) take the negative, viz.: that total abstinence does not prevent consumption; and ten per cent. are doubtful; 26.67 per cent. makes no reply; and only thirty-eight (18.09 per cent.) say that consumption is prevented by total abstinence.

This question, it must be admitted, is very difficult if not, strictly speaking, impossible of solution.

Nevertheless I asked it, thinking that some facts might be elicited, like the following, viz.: that in the family of some drunkard, where many have been given to intemperance, and have died of consumption, one who had practised total abstinence escaped the disease. No such case, I believe, is on record. I regret the conclusion, but think it possible that no such case has occurred. The following comparison of percentages of answers to the sixth and seventh questions, as more clearly illustrating the opinions of the profession on this subject, is interesting:—

	Yes.	Retarded.	No.	Doubt.	No answer.
Consumption apparently prevented or retarded by intoxication,	12.85	3.33	53.80	8.09	21.90
Consumption apparently prevented or retarded by total abstinence,	18.09	2.38	42.38	10.45	26.66

Extracts from Correspondents' letters on this question.

Winsor.—I would answer in the affirmative if under it were to be included those persons who cannot drink without going to excess, and for whom there is no middle course between drunkenness and total abstinence.

Barber.—If a person becomes a total abstainer in early life, consumption may be prevented, and long life secured.

Wilcox.—I have no reason to believe that the moderate use of spirituous liquors would have the effect to cause, or prevent, consumption.

Harris.—Yes; as concomitant of good hygienic care.

Brownell.—A temperate use of stimulants is beneficial in this disease.

Butler.—The less a consumptive uses of stimulants the better he will be; and judicious diet, exercise, &c., the less liable he will be to the disease.

Richmond.—In the moderate use of stimulants there is less liability to the disease. (I have been a total-abstinence man for forty-three years.)

Rice.—I have never seen so much consumption among that class of people who use liquors moderately, as among the strictly abstemious.

EIGHTH QUESTION.

IS CONSUMPTION EVER CAUSED OR PROMOTED BY THE TOTAL ABSTINENCE OF AN INDIVIDUAL FROM INTOXICATING LIQUORS?

Tabular form of returns is as follows:—

	Yes.	No.	Doubtful.	No answer.	Totals.
From Massachusetts,	17	71	17	38	143
Outside of Massachusetts,	9	35	3	20	67
	26	106	20	58	210

The preponderance, one hundred and six (50.47 per cent.) of negative over the affirmative, twenty-six (12.38 per cent.) answers, is not unexpected. The cases in which total abstinence would have any marked influence in causing or promoting consumption, if such be ever the fact, must necessarily be very rare. They would indicate either an inability to bear alcohol, or a martyr-like spirit of abstinence for principle's sake; either of which, to the extent indicated, must be very rare in our community. For even the most rigid of temperance advocates do not refuse stimulants when directed by the physician. The small number of affirmative answers, twenty-six (12.38 per cent.), suggests either a careless mode of answering (which I am not willing to admit, inasmuch as each person could, if he had chosen, have declined to answer that question, as in fact, fifty-eight (27.62 per cent. actually did); or it suggests that there are a certain number of cases

in which physicians believe that total abstinence really promoted what the *temperate* use of alcohol might have retarded or prevented.

I am quite sure that there are individuals now in this community, who are ill from various other complaints, in consequence of their strict adherence to rules of total abstinence, and who are immediately benefited by a physician's prescription of the temperate use of some alcoholic medicine. One can believe, therefore, that rigid abstinence might so lower vitality in some persons, that consumption might more easily occur than in others who use alcohol carefully.

Extracts from letters of Correspondents' on this question.

Barber.—In confirmed habits of intemperance, a little stimulant will sometimes prolong life.

Tracy.—The temporary use of alcoholic stimulants is sometimes essential to the prevention of consumption.

Rice.—I believe strict abstinence to be a means of hastening the fatal termination. This has been according to my observation.

Wakefield.—Total abstinence would not cause consumption.

NINTH QUESTION.

IS CONSUMPTION EVER CAUSED BY OVERSTUDY AT SCHOOL OR COLLEGE?

	Yes.	Yes; indirectly.	No.	Doubtful.	Unanswered.	Totals.
From Massachusetts, . . .	92	4	15	8	24	143
From other places, . . .	54	3	6	2	2	67
	146	7	21	10	26	210

The few that have declined to answer twenty-six (12.38 per cent.) indicate the interest the profession has in the question, and not only its willingness, but also its belief, in its ability to answer it. Let us look at the returns, therefore,

carefully, and see if they indicate anything worthy of notice by our legislators and boards of education. A large proportion (including "Yes," and "Yes, indirectly,"), viz., one hundred and fifty-three (72.85 per cent.), answer affirmatively. In other words, nearly three-quarters of the profession, as represented by our correspondents, declare that by our system of education, we really tend to produce consumption. If this be not worthy of serious thought by our people, I know of no question that can be.

Those who answer in the negative, twenty-one (10 per cent.), and those that are doubtful, ten (4.76 per cent.), are comparatively few. Doubtless what one of our most intelligent correspondents (see letter from D. N. S. Davis, of Chicago) suggests, may be, in certain cases, true; viz., that it is not the great amount of intellectual labor, but the small amount of physical work—the total neglect of it, in fact—together with numerous other bad hygienic conditions, which brings consumption to our scholars. I cannot hold wholly to this opinion. I believe with the majority on this question, and sincerely trust that the opinion of the profession thus expressed, will have its due weight. I have seen not a few patients—scholars—who, under the violent stimulus put upon them by an approaching exhibition or examination for rank or for prizes, have sunk immediately after such extra intellectual labor, wholly prostrated in body and mind, and when I have seen them, far-advanced consumption was plain. Such cases are utterly hopeless.

Extracts from Correspondents' letters on this question.

Fiske.—Overstudy and want of exercise ought to promote consumption.

Ring.—I cannot say about its causing consumption; health is often impaired.

Field.—I have not much faith in hard study's causing disease of any kind amongst students. If their health declines, the cause can usually be traced to other sources than study,—as dissipation, bad food, bad air, want of proper exercise, use of tobacco, etc.

Stone.—Overstudy at school or college, or any depressing cause, may develop the disease, if sufficiently continued, in a subject predisposed.

Wakefield.—Overstudy at school or college would not cause consumption unless scrofula existed.

Hammond.—Overstudy is a fruitful source of consumption by debilitating the system.

Hunt.—Confinement and overstudy in academies and schools.

Harris.—Yes ; as sequel to impaired nutrition, &c.

Knight.—Yes ; if insufficient muscular exercise.

Call.—I think I have never seen a case of consumption caused by overstudy at school. They may have received the fatal blow while at school, but from their habits of life rather than from hard study.

Hopkins.—A *mediate*, not independent cause.

Fisher.—Only in connection with some violation of physical laws, late hours, close apartments, vitiated air, excessive mental emotion otherwise than study, and irregularities of various kinds.

TENTH QUESTION.

IS CONSUMPTION EVER CAUSED OR PROMOTED BY OVERWORK
IN TRADES ?

The table stands as follows :—

	Yes.	Yes; in- directly.	No.	Doubtful.	No answer.	Totals.
From Massachusetts, . . .	108	4	4	5	22	143
From elsewhere, . . .	54	5	4	2	2	67
	162	9	8	7	24	210

As the last question, this, also, becomes very interesting and important when we take a glance at the great number answering in the affirmative, either categorically or with an explanation, one hundred and seventy-one (80.14 per cent.), and compare this proportion with those answering in the negative, eight (3.8 per cent.), or doubtfully, seven (3.33 per cent.), while there are but few that leave the question unanswered, twenty-four (11.42 per cent.). It would seem hardly possible there should be no foundation in the opinion that certain

trades seem to cause consumption. There were only four (1.9 per cent.) out of the whole number who answered simply in the negative. But for the further elucidation of this matter of overwork in trades we may refer to special letters.

Extracts from Correspondents' letters on this question.

King.—I can't say about its causing consumption; health is often injured.

Miner.—Steam work in manufacturing establishments not properly ventilated, or very low.

Haskell.—Perhaps consumption occurs more in those of sedentary pursuits.

Field.—Neither do I consider that overwork, *as such*, causes much disease, but combined with unhealthy food, impure air of shops and dwellings, and among mothers of families with confinement within doors, together with the cares and anxieties attending household affairs and the rearing of children, overwork is productive of many cases of consumption.

Wakefield.—Overwork in trades might cause consumption, especially in an improperly ventilated room.

Hammond.—Overwork, by debilitating the system, tends to cause the disease.

Jordan.—No doubt the excessive efforts of young men and women to get an honest living, confined in small, unventilated workshops, has a great tendency to cause consumption.

Ballou.—Yes, from dust.

Plimpton.—Close confinement and dust will develop an hereditary taint.

ELEVENTH QUESTION.

IS CONSUMPTION EVER CAUSED BY CERTAIN TRADES?

The table runs thus:—

	Yes.	No.	Doubtful.	No answer.	Totals.
From Massachusetts,	102	7	7	27	143
From elsewhere,	56	2	2	7	67
	158	9	9	34	210

In answering this question, also, the affirmative seems to predominate very much. For example, we have one hundred and fifty-eight correspondents (75.24 per cent.) out of the two hundred and ten who believe that certain trades cause consumption, while nine (4.28 per cent.) say "nay"; and those who are doubtful are the same in number, while the number of those who do not reply is thirty-four (16.19 per cent.). The answer, of course, only gives the fact that, of the profession, 75.24 per cent. of our correspondents believe that certain trades cause or promote consumption. For the special trades which, in the opinions of the same correspondents, produce the effect, we refer to letters.

Extracts from Correspondents' letters on this question.

Workman.—In Iron-workers.

Greene.—Shoemaking and factory-life.

Brown.—Shoemakers who work in overheated and ill-ventilated shops are especially liable to consumption. The dust-laden air of cabinet-makers' shops seems to excite the disease in those predisposed. Workmen here consider dust of black walnut particularly irritating.

Dickson.—Wood-turning, dry-grinding in scythe-shops, etc.

Belden.—Such as cause the workmen to inhale irritating substances.

Hathaway.—Workers in tin, etc.

Smith.—Close confinement in mills, ill-located and ill-ventilated boarding-houses, poor food, and cotton-dust.

Spofford.—Several have left trades that others do well in. A shoemaker died suddenly at seventy-six, another is living at eighty-five—close workers—on the bench forty and fifty-five years.

Calkins.—Especially stone-cutters and grinders of metals.

Smith.—Where they are confined to dusty rooms.

Burr.—Operatives in cotton-mills especially liable to it.

Stone.—Manufacturing shoes, sail-making, etc.

Hills.—Working in palm-leaf.

Dwight.—Polishing-rooms.

Breed.—All those trades which compel to a constrained position, preventing free expansion of the chest, and also those where, from the character of the material wrought, the air is filled with particles of organic or mineral materials.

Rice.—I have known consumption either engendered, or early developed, in grinders and polishers of iron and steel. A polisher, in this section, hardly ever lives more than four years, and almost invariably he dies of consumption. Cannot there be some invention for delivering the polishers from the *emery wheel*, so that only a section of the wheel shall be in the room where he stands, leaving all the works and flying particles of steel in another room; or some protector to wear on the face?

Shaw.—I have no doubt that some parts of pianoforte making and cabinet-making prove *exciting causes*, by the large amount of fine dust necessarily inhaled while veneering and sand-papering the dry surfaces before polishing.

Wilcox.—Have seen it developed in millstone cutters and grinders of iron and steel, but consider it only secondary to inflammation and ulceration of the bronchi.

Goodenough.—Shoemakers.

Priest.—Cabinet dust is injurious; sewing-machines.

Holbrook.—I occasionally see here what is called, in popular language, “grinders’ consumption.” The main employment of the inhabitants of this village is that of making axes, hatchets, etc. A part of this work is done over the grindstones and polishing-wheels. The air of the rooms constantly contains the insoluble particles of stone and emery. These particles, in the process of respiration, settle in the lower bronchial tubes, and gradually fill the smaller ones completely, until the lungs assume almost the appearance of the liver, and are almost impervious to air. This condition causes a loss of strength and an inability for much exertion, from shortness of breath, which usually ends in the death of the victim in eight to ten years in the case of *grinders*, and in twelve to sixteen years in the case of *polishers*. Death often comes sooner from pneumonia and bronchitis, to which this sort of lung is peculiarly susceptible. Medicines are of but little use in grinders’ consumption. Many of the persons having this disease return to Canada—whence all the grinders and polishers come—as soon as they begin to find themselves unable to perform their accustomed amount of labor; therefore the fatal cases seen here are much less in number than if the operatives were native-born.

Gavin.—Hard work, constant and long hours, with insufficient food, account for many cases of phthisis amongst poor girls who earn their living by sewing. In most of these cases the distance between their residences and workshops is too far to permit of going home for a hot dinner, so that we find them compelled to make, what ought to be the principal meal of the day, on pies and cold meats. I know of no greater evil than this, and some attempt should be made either to give two hours for dinner, or to establish

boarding-houses on the coöperative principle, where good dinners should be furnished at a moderate profit.

Gilbert.—Brass-workmen and shoe-cutters.

Holmes.—Tailoring and shoemaking.

Harlow.—I would mention "machinists," and what are known in tanneries as "beam-house workers," or "fleshers."

Wakefield.—I had a patient who worked in a brass foundry. He complained of the fine particles irritating the membrane of the bronchial tubes. He died of fully-developed tuberculous disease.

Ballou.—From irritation.

Bolan.—Yes, cotton-factory.

Call.—Yes; railroad conductor.

Palmer.—Confining; dusty.

Peaslee.—Sedentary, as shoemaking.

Brownell.—Those are worst where operatives inhale deleterious particles.

McKenzie.—Very common amongst tailors at the West End of London.

Twitchell.—Machinists, particularly those who are engaged in turning iron-castings, or use the emery wheel, I think are more liable to the disease than those who work in wood; unless, as in the rail-shops, they use sand-paper.

McKean.—Watchmakers and jewellers.

TWELFTH QUESTION.

IS CONSUMPTION EVER CAUSED, OR PROMOTED, BY OVERWORK OF ANY KIND?

Here is the tabular statement:—

	Yes.	Yes; perhaps.	No.	Doubtful.	No answers.	Totals.
From Massachusetts, . . .	94	3	10	5	31	143
elsewhere, . . .	49	6	3	2	7	67
	143	9	13	7	38	210

The fact shown in the above table indicates that the profession inclines to the affirmative more distinctly than one would have anticipated. One hundred and fifty-two (72.38 per cent.) believe the proposition; thirteen (or 6.19 per cent.) say "nay;" seven (or 3.33 per cent.) being doubtful; while thirty-eight (or 18.09 per cent.) do not answer the question.

It would seem, therefore, that the same thought has occurred to the vast majority of the profession, that has often occurred to myself, during my professional life, viz. : that the people of this country are overworking generally. We have no pastimes; no "long vacations;" we give no rest to ourselves, or our employes. The struggles for life are so great, and the "accursed love of gold," the nature of our political institutions, our stimulating climate, all urge us to work, and to overwork. Even in our parties, during the winter, and at gay watering-places during the summer, there is no rest, but "the dance of death" goes gayly round all the time,—whether we work or play. This is a sad statement, but, I believe, true.

Extracts from our Correspondents' letters relative to this question.

Hitchcock.—Yes; army-life.

Greene.—Dr. Bowditch will, perhaps, recall the case of M—— T——, whom he saw with me, and who died last year of acute tuberculosis. She was the oldest of seven children, then living. Here was no family history of consumption; parents both grandmothers, and several aunts, still living. Her place of residence was elevated and salubrious, not damp. We could assign no exciting cause, unless perhaps carelessness, and application as an amanuensis. Now her third brother, a rather undersized and effeminate-shaped youth, a dry-goods salesman, gives unequivocal signs of developing phthisis, but of a type less acute than his sister's.

Bullard.—No; if out of doors.

Murchison.—Yes, mental overwork included.

THIRTEENTH QUESTION.

IS CONSUMPTION EVER CAUSED, OR PROMOTED, BY SEVERE BODILY INJURIES?

The table is as follows:—

	Yes.	Yes; perhaps.	No.	Doubtful.	Unanswered.	Totals.
From Massachusetts, . . .	61	5	28	9	40	143
elsewhere, . . .	41	1	10	1	14	67
	102	6	38	10	54	210

If we can trust the above table as giving the views of the profession generally, as it does those of our correspondents, we must infer that severe bodily injuries do not very generally cause, or promote consumption.

The analysis of the above table shows that $102+6=108$ (51.42 per cent.), of the affirmative (and some of these are doubtful) are about balanced by those holding the negative, thirty-eight (18.09 per cent.), the doubtful, ten (4.76 per cent.), and those who do not answer, fifty-four (25.71 per cent.). Here, again, I agree with the small majority. I cannot now remember any case in which I could trace consumption to a physical injury.

Extracts from letters from Correspondents on this question.

Smith.—I think I have seen it follow severe drainage from wounds.

———By causing confinement indoors.

Miner.—Saw one case in which it was apparently caused by the debility consequent on a severe wound.

Wakefield.—An injury to the lungs, otherwise sound, might develop the disease.

Haynes.—Yes, if confined to the thorax.

Brownell.—All kinds of chest wounds, and any exhausting disease, or injury.

FOURTEENTH QUESTION.

IS CONSUMPTION EVER CAUSED, OR PROMOTED, BY MENTAL TROUBLE?

The table resulting from our correspondence, is as follows:—

	Yes.	No.	Doubtful.	No answer.	Totals.
From Massachusetts,	97	14	8	24	143
elsewhere,	53	4	2	8	67
	150	18	10	32	210

The importance of this question cannot be over-rated; and the above table presents very interesting results. If we compare the number holding the affirmative, with those holding the negative, of the question, the difference is very great, one hundred and fifty (71.42 per cent.) against eighteen (8.05 per cent.). Then, too, the number who are doubtful, is small, ten, (4.76 per cent.), and of these who do not answer, also small, compared with what is noticeable about other questions, viz., thirty-two (15.23 per cent.).

Altogether, the returns indicate that the question is an interesting one to our correspondents, and a large proportion of them believe themselves justified in the proposition that mental anguish promotes, or causes consumption. Though at one time expressing perhaps a rather different opinion,* I now must hold to the dogma that we cannot separate the various elements of man. Man is body and mind; they are mysteriously joined, they mutually re-act, one on the other;—psychology, physiology and pathology are irrevocably joined. A healthy mind cannot be in an unsound body; and, vice versa, an unhealthy mind, which mental trouble, even of the briefest duration, must cause, will tend to interfere with some of the fundamental laws of physical health; and by doing so

* Consumption in America. "Atlantic Monthly," February, 1869.

may tend to produce consumption, by a lowering of the vital powers.

Extracts from our Correspondents' letters relative to this question.

Luce.—One case where no hereditary predispositions—young lady—love affair.

Hills.—I can give no special case, but have thought that patients who were given to despondency, waste more rapidly than those who seemed hopeful.

Wakefield.—I think not. Such cases die off by exhaustion of nerve-force, softening of the brain, and effusion within the cavity of the brain.

Hammond.—I think mental trouble tends to cause it.

FIFTEENTH QUESTION.

IS CONSUMPTION EVER CAUSED, OR PROMOTED, BY MARRIAGE?

The table is as follows :—

	Yes.	Yes; perhaps.	No.	Doubtful.	No answers.	Totals.
From Massachusetts,	47	1	46	9	40	143
elsewhere,	33	2	17	3	12	67
	80	3	63	12	52	210

Our correspondents do not have any decided opinion on the question; eighty (39.52 per cent.) being in the affirmative, and sixty-three (30 per cent.) in the negative, while fifty-two (25.66 per cent.) decline answering. Undoubtedly, a properly governed marriage, entered into by young, reasonable, healthy people, tends to longer happiness and more healthful life than any ascetic celibacy can bring about. But the exceptions to this state of perfectly robust health, on the part of contracting parties, are numerous, and I have little doubt that in some instances, consumption

may be promoted, if not caused, by marriage, if imprudently contracted, and subsequently unwisely or incautiously consummated.

Extracts from letters from Correspondents on this question.

Ward.—I don't think matrimony necessarily has any effect, either as cause or cure, or even in preventing or accelerating the development of tubercular disease. If improperly or excessively employed,—as in child-bearing or sexual indulgence,—it undoubtedly often does.

Hunt.—Early marriage is a cause.

Haskell.—By overbearing of children ; and confinement.

Reynolds.—Yes ; in the female.

Stone.—Yes ; if unhappy.

Smith.—I believe excessive venery induces the disease.

Nichols.—I have known many cases in both sexes where individuals having no hereditary predispositions to this disease, and marrying those who were so predisposed, have had the disease developed, and which has gone on to a fatal termination.

Field.—Marriage, in itself, promotes health. And yet many a woman entering the marriage state with a physical system enfeebled by unhealthy modes of living, training and education, and perhaps constitutionally disposed to disease, finds an early grave from phthisis, promoted by the bearing, rearing and care of children, together with other injurious influences.

Mann.—Yes ; when the partner is tuberculous.

Haskell.—By early marriages and frequent pregnancies.

Belden.—Rather increased after birth of child.

Abbot.—When physically and morally coaptated.

Spalding.—Yes ; promoted in persons predisposed.

Knight.—No ; unless over-indulgence in the sexual relation.

Hopkins.—Promoted not by marriage but by the burden of domestic cares.

Sanborn.—Marriage is not necessarily a cause of consumption, but inordinate sexual indulgence which almost invariably follows, is, in my opinion, one of the chief causes of consumption.

Carbee.—Not, except where the parents are predisposed.

Bullard.—Two instances where but slight signs of any taint, but the inordinate sexual intercourse produced the disease in the female.

Brownell.—Not in itself, but from sleeping with and inhaling the breath of a consumptive person.

Eldredge.—If marriage did not bring an increase of cares it would have a favorable influence in both sexes, but as it generally does, it oftener has the contrary effect.

Mackenzie.—With men, but not with women.

Snow.—I have no doubt, from personal observation, that early marriage and the early development of the sexual function tend to promote consumption.

Smith.—Marriage commonly promotes health, and hence may check consumption, but when it brings undue burden or indulgence, especially too frequent child-bearing, it promotes its progress.

Howe.—I said *promoted* simply because I find marriage is almost always attended with inordinate sexual indulgence, especially in the young. Were it not for this fact I do not think it would be considered a promoter of consumption.

Hurlbert.—I think consumption, in this locality, is promoted more by inter-marriage than by any other cause except hereditary taint.

SIXTEENTH QUESTION.

IS CONSUMPTION EVER CHECKED BY CHILD-BEARING, &C. ?

The table is as follows :—

	Yes.	Checked during gestation; more rapid after.	It is possible.	No.	Doubtful.	No answers.	Totals.
From Massachusetts,	71	22	4	21	6	19	143
From elsewhere,	32	15	2	12	1	5	67
	103	37	6	33	7	24	210

This table is interesting in several respects, viz., first, suggesting the interest the profession has in the question, only 24 (11.42 per cent.) having declined to answer it. Second, in the fact brought out by 37 (17.61 per cent.) that consump-

tion, while being checked by pregnancy, seems to run on more rapidly after delivery. Third, including the three first columns under the one head of affirmative, we learn that one hundred and forty-six out of the two hundred and ten (69.52 per cent.) of all the correspondents believe that consumption is checked by child-bearing.

Extracts from Correspondents' letters relative to this question.

Deane.—Its effects are modified very much by circumstances; sometimes checked, sometimes promoted.

Shurtleff.—Seems to retard it till confinement, and then to hasten it to a fatal termination.

Blood.—Checked while with child, but rapidly advancing after the birth.

Lindley.—I think I have seen it checked, but too often child-bearing promotes it.

Spofford.—Several died soon after delivery.

Burr.—Have notes of two cases of marked phthisis checked by child-bearing.

Winsor.—I am confident that I have seen the progress of the disease checked while pregnancy lasted, some half a dozen times. On the other hand, I have seen it hastened by lactation.

Blodgett.—Have now under operation a lady who, having borne three children in as many consecutive years, seems to have laid the foundation of a continually progressing tubercular action by this constant requisition upon her surplus vital energies. The family have a tubercular taint attending each generation, this lady only, of the present generation, having been the subject of tubercular activity. The connection between manifest tubercular action and the exhaustion consequent upon too frequent parturition, here seems to be plain and direct.

Stone.—I have just lost a patient from consumption, who was delivered of a seven-months' child on the day of her death. She came under my care about the time she became pregnant, and her disease steadily advanced,—her condition rather made worse by her pregnancy,—till her death. The autopsy showed most extensive disease of both lungs, tubercular in character. Consumption is not a frequent disease in this town, and the population is too changing to permit me to express any opinion decidedly.

Reed.—I have known several cases where the progress of the disease seemed to be checked by repeated pregnancies with short intervals. Prolonged lactation develops the disease rapidly.

Morse.—I have known of five cases where women having consumption, the disease was checked on becoming pregnant; but they died soon after parturition, the disease progressing with renewed vigor. I think I have seen several cases of consumption caused or promoted by lactation.

Luce.—I have known cases checked by child-bearing.

Rice.—Child-bearing often hastens the development of tubercular phthisis.

Haskell.—Those I have seen were cases of *apparently incipient* phthisis, and from the extreme suffering of the *first three months*, attended by a cough, &c., they certainly did better for a time. In other cases, doubtful effect.

Knight.—Checked during pregnancy, but developed rapidly afterward.

Carbee.—The disease is seemingly transmitted from the child to the mother.

Bullard.—No; but promoted.

Condie.—It is a curious circumstance to how great an extent in a female with confirmed consumption upon her becoming pregnant the symptoms of the disease will assume a favorable aspect, foreshadowing, as it were, a speedy convalescence, but rapidly after parturition the disease will assume an unfavorable aspect, running on quickly to a fatal termination. (I would refer you to two papers of mine in the "American Journal of Medical Sciences," April, 1871, page 365; July, 1871, page 119.) I have prepared a paper which may appear in the October (1871) number of the "American Journal," it is on "spurious or simulated consumption."

Eaton.—Many of the causes, &c., in the list of questions might be connected. Thus marriage might promote phthisis, from sexual imprudence in either sex; while in the female during pregnancy it might be, and usually is, *checked*, but after the child is born the tubercular deposit is increased, and also the softening.

SEVENTEENTH QUESTION.

IS CONSUMPTION CAUSED OR PROMOTED BY INORDINATE SEXUAL INDULGENCE?

This question is one which, from its very nature, must be very difficult to answer. We must depend for its perfect solution upon not only the utmost skill and penetration on the part of a physician, but likewise for perfect certainty, upon the voluntary confession of sufferers, and confession, too, on a point which is rarely alluded to by any one, even to his most intimate friend. In fact, a perfect knowledge on the subject presupposes not only a species of confessional such as, it is true, sometimes exists between physician and patient, but likewise it requires great wisdom on the part of the prac-

tioner, not to be led by the self-accusation of the patient into a belief of the influence of this cause as a chief element in the production of the disease actually existing. Believing as I do, that there are very rare cases in which there can be little or no doubt of the importance of this cause, I hoped to obtain some facts to elucidate the whole matter, and therefore the general question was asked.

The table resulting is as follows, and certainly it seems to prove that the question was not without point in the estimate of our correspondents.

	Yes.	Yes; also onanism, &c.	No.	Doubtful.	Unanswered.	Totals.
From Massachusetts, .	91	3	12	9	28	143
elsewhere, . . .	56	2	4	2	3	67
	147	5	16	11	31	210

One is struck with the small percentage of correspondents who are doubtful,—11 out of 210, or 5.23 per cent. ; and also of those who do not vouchsafe a reply ; 31 out of 210, or 15.23 per cent. The few who categorically answer "nay" is small, viz., 16 out of 210, or 7.61 per cent. And finally, we may notice the large proportion who believe that this over-indulgence or a vicious habit are promoters of consumption, viz., one hundred and fifty-two out of two hundred and ten (72.38 per cent). I cannot help commending this result to the serious consideration, first, of the wild, thoughtless and licentious ; and, second, of all who think that marriage absolves from careful attention to the laws of health in this particular. And here may be laid down one general rule that must be true, viz., first, that when there is no healthful vigor of body and mind, but rather the reverse, after indulgence, extreme prudence should be the guardian of the family relations ; and, second, that when extreme lassitude, nervousness or any special *malaise* follows such indulgence, either great abstemiousness or total abstinence for a time should be inculcated, until by proper regimen or treatment the healthy condition of system is regained.

Extracts from Correspondents' letters relative to this question.

Stone.—Overwork or mental trouble, or immoderate sexual indulgence, especially self-abuse, may at times be a cause.

Greene.—Onanism is a cause.

Harlow.—I am well satisfied that inordinate, or even moderate, sexual indulgence has a tendency to develop tuberculosis.

Packard.—Consumption is a mental disease arising from the improper relations and bad conditions of our social marriage system,—the same as all the forms of intemperance. It is the result of an overactive cerebellum excluding the higher faculties of soul, life and will-power. Hence a premature decay of the whole being. It is preëminently a hereditary disease,—self-begetting and self-sustaining.

Hammond.—I think this a cause of the disease. Whatever tends to debilitate the general system exposes the individuals to those diseases to which he is predisposed. There is a vital elasticity in the animal system which causes the system to recover itself from abuses, but the elasticity is greatly impaired by too frequent use. There are many of those causes mentioned in your circular that seem to act no part in the production of consumption, but, to those hereditarily disposed, would act a very important part. Hereditary predisposition to any disease does not necessarily doom the individual to death from the disease to which he is predisposed. For, by avoiding those causes that would tend to develop the complaint to which he was predisposed, he would die of some other disease. That some persons are hereditarily disposed to consumption there is no question in my mind. Although there may be no particular indication in early youth, yet, when the system becomes developed, and the functions of the organs of generation come into operation, then a drain is produced upon the system that brings with action the latent disease.

Sanborn.—Married people should be advised to occupy separate sleeping-apartments, except, perhaps, semi-annually. And children should be kept so busy at work or play, that they would be tired enough to sleep soundly through the night. They should be furnished with suitable employment, a portion of the time, with pleasant reading, music, light games, &c., so as to leave no time to learn, or learn of, pernicious habits and customs until they arrive at maturity, and then taught to avoid them as they would a tiger. Tobacco is another cause of consumption; worse, if anything, than rum.

Manson.—Yes; also by onanism.

Bullard.—According to my observation there is almost always a hereditary influence; but that solitary pollution and inordinate sexual indulgence have as much, if not more, to do with its development than any, or perhaps *all*, other causes.

EIGHTEENTH QUESTION.

IS CONSUMPTION EVER CAUSED OR PROMOTED BY CONTAGION OR INFECTION?

Under the light of modern investigations as to the inoculability of tuberculosis, the question of communication of the disease from one person to another, becomes a vital question. Dr. Budd, of Bristol, holds that the dried sputa have particles in them of the real "*contagium*" of this disease, and that they must be floating about in every atmosphere in which a consumptive is living. He lays great stress on this matter of communication of the disease in that numerous class of cases, usually attributed to a hereditary tendency, and where the disease runs through many members of a family.

Deeming the question thus important, the views of our correspondents become deeply interesting. Their answers, let it be always remembered, are grounded on their own everyday experience, and not on books.

The table runs thus, and we are at a glance struck with the difference between the views of correspondents on this and on the preceding question. These views are less decided. There are less in favor of, and more against the proposition, while the number of skeptical has increased.

	Yes.	Yes; occasionally, when under really favorable circumstances.	No.	Doubtful.	No answers.	Totals.
From Massachusetts, .	70	4	31	18	20	143
elsewhere, . . .	30	6	14	9	8	67
	100	10	45	27	28	210

One hundred and ten out of two hundred and ten, or 52.38 per cent., answer affirmatively; while forty-five (21.42 per cent.) answer "Nay." Twenty-seven (12.85 per cent.) are doubtful; twenty-eight (13.33 per cent.) make no reply.

Evidently those who believe in the contagion or infection are not so numerous or so sanguine as they are upon some other questions submitted to them. May not the fact of the hitherto

great prevalence of the opinion of the non-contagiousness of this disease among English and American practitioners, and our strong belief in the hereditary character of it, have led us all to ignore what may, after all, prove a potent cause, and which we shall recognize on more close inspection? The question is of much importance. Physicians should be prepared to give directions as to the use of the same bed or chamber by consumptives and members of their families, or by their friends. I must defer a more elaborate statement on my own part, to a subsequent paper; but I will say that I have, for years, always endeavored to prevent any one from sleeping with a consumptive. If possible, I prefer the patient should be in one room, the attendant in another; with the door open between them, perhaps; but I never allow any one to sleep in the same bed with the consumptive. I direct that the attendant should not only thoroughly ventilate the room or sleeping-chamber, but that, each day, the attendant should walk or drive out a sufficient length of time to enable him or her to get pure air in abundance.

Extracts from letters from Correspondents relative to this question.

Chase.—From inhaling the breath of another, &c.

Hathaway.—Yes; after measles, typhoid diseases, &c.

Wilcox.—Healthy husband or wife by continued exposure from the other.

Nichols.—I think a child, free from all hereditary taint, might contract the disease by sleeping with a person having consumption.

Chapin.—I think in two families hereditarily disposed that it was produced by contagion, in some of the members of each family and their kindred.

Brown.—I have sometimes thought it contagious or infectious, particularly in members of the same family living together, and exposed to the same influences.

Gott.—A husband, not predisposed by hereditary taint, died of the disease apparently caused by taking care of his wife during her sickness. The wife also apparently contracted the disease while taking care of a brother. I have seen several similar instances appearing to originate from contagion.

Breed.—I have seen cases where the disease seemed to be developed by close contact, as in cases of husband and wife, or sisters habitually using the same bed, while in one of them the disease was fully developed.

Brown.—I am more inclined than I was at one time to attach importance to the influence of contagion. In two cases which have come under my notice the disease seems to have been communicated from husband to wife, resulting fatally in a short period in both cases.

Ward.—Perhaps persons much with consumptives,—rooming and sleeping with them,—are much more likely to contract the disease. I think such cases have several times come under my observation.

Smith.—I have now under my care a lady,—widow,—whose husband died of consumption. No hereditary influence predisposed to phthisis, but from *intense grief* lowering vitality, or from *materies morbi* derived from husband, or, as is probable, both causes acting together, she contracted phthisis. She has hemorrhage and tuberculated lungs, and probably will die before many months. Before the death of her husband, three years since, she suffered severely from whooping-cough. First hemorrhage about a year since.

Calkins.—In very many cases, I have the opinion from my own observations, that consumption is communicable by contagion or infection. The cases of persons attacked after exposure have been those who have been confined with the sick, in small, ill-ventilated rooms, or where the persons exposed *have slept with the sick for some time*. In several instances, persons who have no hereditary tendency to tuberculosis, have been suddenly attacked with all the phenomena of phthisis after full and continued exposure. My observation has continued for a period of twenty years, most of this time in Hampden County, Mass.

Blanchard.—An interesting case occurred here some years since, in which consumption seemed to be promoted by contagion. The case was that of a young wife who never had a child. During the sickness of the husband with consumption, the wife was constant and assiduous in her attentions, remaining much of the time in the sick-room, and notwithstanding the remonstrances of friends, sleeping there at night, and (during at least a portion of the time) in the same bed with the invalid. There was an inherited predisposition to consumption, her mother having died of that disease, but there was no special manifestation of it, in her case, until after this continued contact. After the death of her husband it rapidly developed, and she succumbed to its ravages. Making due allowance for the effects of anxiety and grief, it always appeared to me that contact and infectious air had a large share in the development of the disease.

Rice.—I am a firm believer that consumption is a contagious disease, much more so than is generally believed. I have in my mind several cases where there was almost positive evidence of contagion. Mrs. J. C. M——, a lady about sixty, died last spring, after having the disease two years. Her husband, before she was taken sick, was a perfectly healthy man, with sound lungs. He took care of her, slept with her, and nursed her. Soon after her death he began to cough, and went rapidly down with consumption. There have been no cases of the kind in his family for two generations. I believe he took the disease by infection.

Bullard.—I know of two instances of the wife's taking the disease by sleeping with her husband, and when the wife had no hereditary taint.

———.—I believe that consumption is caused or promoted by contagion, or infection; so perhaps a better word would be *ingrafting of pulmonary tubercle*, and it is to avoid this that I would have a child, already predisposed to the disease, removed entirely from its influences. I think that many physicians, if not most, know cases in their practice where the nurse of a consumptive patient has died of tuberculosis within a short time. Case: Miss ——, aged 34, a strong, healthy, fleshy woman, weighing upwards of 140 pounds, no consumption in the family, nursed Mrs. B—— during a long sickness,—tuberculosis,—which continued nearly two years from first attack. It was noticed that she had a slight hacking cough during the last of her attendance, but no particular notice of it was taken at that time. Evident signs of tuberculosis were found shortly after the death of Mrs. B., and within eighteen months she died of well-marked consumption. I have seen other cases, but none as well marked as this.

Knight.—Yes; under very favorable circumstances.

Carbee.—Yes; by constantly inhaling fetid breath.

Hopkins.—I have left the question unanswered. If consumption does occasionally follow close upon whooping-cough, or measles, it is probably an open question whether the impression left by the specific contagion were, itself, the predisposing cause of phthisis, or only the exciting cause of a predisposition before implanted. I have thus offered what is suggestive, not statistical.

Carr.—Yes; as a sequel to contagious disease. It sometimes follows virulent clap, and where there is hereditary taint, frequent miscarriage induces the disease. Everything which has lowered the vital forces below a certain degree, whether our habits, location, sickness, exposure to sudden atmospheric changes, or any other debilitating influence, promotes the development of consumption in a person springing from consumptive parents.

Butler.—There are well-authenticated cases on record (see Amer. Jour. Med. Sciences, 1871) which seem to favor strongly the idea of its contagious nature, but my opinion is not fully settled, though I am inclined to the belief that, under certain favorable circumstances, it may be communicated from one person to another.

Heath.—A family which I have occasionally attended as physician has had, within the past two years, four children between the ages of eighteen and thirty-two return home to die of consumption,—one from Ohio, two from New Jersey, and one from Connecticut. The mother is healthy; the father, now at the age of seventy, is able to labor on a farm, but has been troubled with a bad cough for many years. The most intimate relations and favorable conditions for contagion or infection exist between husband and wife, but I have never known a case to be so communicated.

Garin.—I am thoroughly convinced that phthisis is frequently caused by contagion, and deserves to be classed with typhoid fever in this respect. I have seen unmistakable evidence where a healthy wife contracted the disease—phthisis—from sleeping with her husband suffering from that disease, and vice versa. So much am I convinced of the truth of this statement that

I always forbid a healthy man from sleeping in the same room with a phthisical patient.

Wilmarth.—I can mention one marked case. A lady, mother of three girls, belonging to a family apparently free from consumption, became consumptive when the oldest girl was eight or ten years old. She lived about ten years in a consumptive condition. During the last three years of the disease her oldest daughter was her constant attendant and nurse. The breath of the patient was offensive, and she raised large quantities of thick sputa, which had the same offensive smell as the breath. About a year after the mother's death the oldest daughter went into consumption, and presented the same symptoms that her mother did, except that in her case the disease ran its course in a few months. Her death occurred about four years ago. The younger sisters, who were not so much with their mother as the older one, are now living, and apparently well.

Jordan.—We very often see one healthy individual who, in the habit of sleeping with a consumptive, follows with the same disease.

NINETEENTH QUESTION.

IS CONSUMPTION EVER CAUSED OR PROMOTED BY AN
EXPOSED LOCATION OF RESIDENCE?

The table gives the following results:—

	Yes.	No.	Doubtful.	Unanswered.	Totals.
From Massachusetts,	85	24	7	27	143
elsewhere,	44	14	—	9	67
	129	38	7	36	210

One hundred and twenty-nine of the two hundred and ten (or 61.42 per cent.) think the exposure of a residence may have some effect in this disease, and thirty-eight (18.09 per cent.) deny the fact. Seven (or 3.33 per cent.) are doubtful, and thirty-six (or 17.14 per cent.) do not answer.

One cannot say that the cause seems to be a prominent one, in the eyes of the majority of our correspondents.

I used the expression "exposed" in order to find, if possible, if the simple exposure to violent atmospheric changes, from the situation of the homestead, tends to promote consumption. The question is in contradistinction to the next

question, which has reference to the effect of moisture, and upon which we have no doubt, from investigations made in America and England. I think that my experience justifies me in saying that *simple exposure* rarely, if ever, causes consumption. But, when combined with moisture of soil in and around houses, it is a prominent fact in the annals of consumption in any community.

Extracts from letters from Correspondents relative to this question.

Ward.—Dwellings should be exposed to wind and sun.

Burr.—Consumption occurs as frequently among families who live on the ridge highland as in the other portions of the city.

Spofford.—If the ground is dry its situation near the water does not affect health. For fifty-three years I have lived near the Merrimac River; am eighty-three years old,—wife is eighty-one. Can mention seven near neighbors above eighty years. To these may be added, of three hundred deaths (in the course of the last few years) six, from eighty to eighty-seven; one, ninety-five, and another ninety-seven. In the present population, 1,600, there are now five aged ninety, and twelve between eighty and eighty-five.

Jordan.—Excessive exposure to heat and cold exert a great influence in producing the disease.

Aiken.—If to malaria, etc., yes; if to sun, etc., no.

Carbee.—Yes; by exposure to pernicious winds.

Eaton.—An exposed dwelling may promote it, especially if exposed to *damp* winds, when a *dry* exposed place might for a time, retard it. Thus is seen the difference between the climate of Minnesota and Iowa. *There* the weather seems as cold, and it is as windy as *here*, yet the atmosphere is dry there, instead of being moist as in New England. *There*, a new case of Phthisis Pulmonalis is rarely developed, yet many die who go from *here* with the disease far advanced. *There*, many times in cold weather, the air feels icy and frozen, as if coming from very cold water. Such air, of course, must be bad for the consumptive—such has certainly been my experience in practice.

TWENTIETH QUESTION.

IS CONSUMPTION EVER CAUSED OR PROMOTED BY A WET LOCATION?

	Yes.	No.	Doubtful.	Unanswered.	Totals.
From Massachusetts,	110	17	1	14	142
elsewhere,	58	4	1	5	68
	168	21	2	19	210

Upon this question the profession is more nearly unanimous, than upon most of those that preceded it. This is probably owing to the fact that investigations carried on in Massachusetts, many years since, by myself,* and subsequently, in England, by Dr. Buchanan, under the special directions of the Medical Officer of the Privy Council,† have fully proved that residence on a damp soil tends to the production and promotion of consumption, in New and Old England.

These investigations and these results have probably given an explanation to the prevalence of consumptive cases in the practice of physicians, which previously were less explicable.

The percentages are as follows: one hundred and sixty-nine (80 per cent.) take the affirmative; twenty-one (10 per cent.) the negative; two (0.95 per cent.) are doubtful, and nineteen (9.04 per cent.) have returned no answer.

Extracts from letters from Correspondents relative to this question.

Ward.—Dwellings should not be exposed to cold or dampness.

Brown.—I am more and more impressed with the influence of location, as

* Annual Discourse before the Massachusetts Medical Society, by Henry I. Bowditch, M.D., also Prefatory and Historical Remarks by the same author to "Consumption in New England and elsewhere, or soil-moisture one of its chief causes." 868, David Clapp.

† 9th and 10th Reports of the Medical Officer of the Privy Council. 1866-7. London.

determined by low levels and damp surroundings. I think that the use of cellar-kitchens in certain localities, is decidedly unhealthy.

Barker.—In exposed, wet, damp and foggy locations, the general health and strength suffer, and consumption is promoted.

Downes.—I have a patient, at present, who has two homes,—the one on a dry, sandy soil, the other near a large brook and pond. While at the latter, she coughs more, and invariably feels worse.

Torrey.—I have often seen consumption apparently checked by change of locality, by going to Southern or Western States where the atmosphere is dry. I think consumption is very much on the increase here (Braintree), owing to the moisture of the land. I think, also, it is owing to the occupation of a large portion of the inhabitants, being manufacturers of boots, and working in small, close shops.

Brigham.—Have attended two cases of consumption following colds contracted by moving into new houses before the plastering had become thoroughly dry.

Adams.—I came to Stockbridge thirty-three years ago. At that time and during the ten years following, there were in the village, several cases of consumption,—all young ladies from sixteen to twenty-five years of age. I heard then no opinions of the cause, except the habit, said to have been prevalent, of evening walks with slight protection. It seems to me that the evenings then were much more damp than they are now. For nearly twenty years I do not remember a case of consumption originating here. The plain is sandy, and the soil in the meadows on the banks of the Housatonic is so porous that the water filters through it and quickly reaches the river. Our village has been supplied, since 1864, with pure water from the mountain. Typhoid fever has been rare during the last five or seven years; previously, the disease was quite regular in its autumnal visitations. Drains and cellars receive proper attention, and care is taken to render them inoffensive.

Morse.—I am convinced that living in a valley near water is an active cause in producing consumption. But this, I believe, is universally conceded.

Metcalf.—Consumption is rather a rare disease (more rare, I think, in the last twenty-five or thirty years), in the circle of my practice; and oftener occurring in families located in exposed situations, and especially if the site is wet.

I would invite especial attention to the following letter:—

Huse.—The marked prevalence of phthisis in Georgetown, is undoubtedly due to the extremely moist condition of a considerable portion of the soil. The town being located at the intersection of two main roads which traverse a large area of fresh meadow-land, a large basin collecting the drainage of a large area of upland. The immediate centre of the town is of gravelly soil, quite pervious to water, and is quickly dry; but the south-east, south and south-west

portions are boggy and wet, inundated by freshets, and filling many cellars with dampness, if not with water. The meadows, like all others at certain temperatures, give many noisome and thick fogs, which completely envelope these portions of the town, only to be dispelled by the next day's sun, or a favorable wind. At these times, any one standing on the neighboring hill, can see only the tops of the most elevated buildings, which appear to come out of an immense cloud. The town is but little shaded, though considerable woodland is in the outskirts; but in the inhabited portion, the sunlight has free ingress. As in all basins, there are several ponds, of several hundred acres area in the aggregate, which, with the flowage of the meadowland, serve as a mill-privilege, thereby increasing the sources of dampness, besides being the cause of much litigation because of damages incurred by overflow of gardens.

Chamberlain.—The causes of consumption are sometimes past finding out, as the following circumstances will show: Two brothers living in this town, when young men, built themselves houses, not more than fifty or sixty rods apart; one built a wooden house, on a slightly elevated, sandy locality—the house is not shaded at all, but takes the sunshine freely throughout the day. In this he reared a family of twelve children, eleven of which are now living, the youngest being about thirty years of age; a part of the family still occupy the house, and no case of consumption has ever occurred in the family. The other brother built a brick house on a spot neither elevated nor low; the site is not wet, but is not as dry, and is a little less elevated than the point selected for the wooden house built by the first brother. Here he reared eleven children, and has occupied the house probably forty years. The house is considerably shaded on the south front. Within the last twenty years there have occurred, in this family, nine cases of consumption. Both of these houses front to the south, and both are equally exposed to the north-west winds. Consumption is not hereditary in either family, through father or mother. I know another family in which consumption is not hereditary, who occupy a house in which sunshine can scarcely enter, in consequence of shade-trees and the peculiar build of the house, which has lost six children by consumption. They all arrived at adult age, however, before disclosing symptoms of the disease. In regard to the mortality attaching to the brick house above mentioned, the shading of the south side cannot be considered a cause, as the disease first showed itself before the trees were large enough to shade the premises. I can call to mind several similar instances. My own conviction has been for many years, that consumption loves a moist locality and a dark dwelling. I have noticed that houses built upon a dry subsoil, and so constructed that they admit the sun freely, are generally free from consumption. A dry locality, with plenty of sunshine, warm clothing, and good living, will never breed consumption; with these blessings surrounding a person he may, even if he inherits a predisposition to consumption, keep the disease at bay, and live to a good old age.

Holmes.—Yes; and east winds and fogs.

Cushman.—It has been said in official reports, that in this town—Randolph—consumption is more prevalent than in any other town in the State. It will be difficult to account for the fact; Randolph is high and dry land. The land between us and the ocean is lower than it is in Randolph. The

east and north-east winds come to us loaded with decayed vegetable matter from the lowlands of Braintree and Quincy.

Wheeler.—I am quite positive, from well-marked observation, that dwellings situated on northern declivities, with low, damp lands below,—for example, a marsh or a meadow, either fresh or salt, to the eastward,—are peculiarly exposed to consumptive causes. I have seen whole families, so exposed, fade away in a few years, after having reached adult life, especially the younger members—the children more frequently than the parents. This I have observed in families where the children have been born and reared in the locality.

Greene.—Our little town has been more than usually afflicted by the dreadful disease to which the circular calls attention. One little hamlet on the banks of the North River, our principal stream, has four new cases. This village is very low, and is almost every night enveloped in a fog. A hundred rods to the north of this village is another case—a young mother with four children. This case is apparently an example of a variety of causes combining to produce the dreadful result—consumption. The causes in this case are (1), hard labor at cotton-weaving; (2), frequent child-bearing; (3), foggy air, muddy soil, and perhaps foul drinking-water—for the patient uses water from a spring which was often white as milk, with clay; and her abode is a factory tenement on the bank of a canal which supplies power to the mill she worked in. The soil is always damp there. I have one patient who contracted the disease while a “commercial traveller” in Michigan, a notoriously swampy State. One patient is the daughter of a woman who was cured of consumption years ago. I have this statement from her (the mother's) attendant, Dr. A. C. Deane, of Greenfield. Her mother recovered under the influence of change of air, exercise, and cod-liver oil. The daughter's disease followed (1), hard work at cotton-spinning; (2), wet location of home; (3), pneumonia, right lung, which is now the seat of tubercle; (4), drunken habits of father; (5), previous tuberculosis of mother; (6), irregular menses. Two cases are children of a mother who died (as I believe) of leucocythemia; she certainly had anæmia, exophthalmos, and slightly enlarged thyroid gland. Both live in a foggy, wet spot. One case died of consumption, following, and complicated by severe chronic pharyngitis. This case was apparently made worse by child-bearing. A boggy pasture is in the rear of the house.

Mayo.—I believe a cold clayey soil develops consumption, from its exhalation of moisture, causing damp dwellings; with miasma from the soil, etc.

Manson.—I have observed, in two or three instances, where no hereditary taint existed, several children carried off by consumption; and where the homestead was situated on an elevated and dry situation.

Bullard.—A young man, aged twenty-six, with slight, if any, hereditary taint, living in a low, wet place, almost over a mill-pond, was taken with incipient phthisis. He was removed to a dry locality, and is now under treatment, and nearly free from any trace of phthisis.

Haskell.—Exposure, and sea-fog.

King.—I know a family living in a wet situation which I think has helped develop the disease. Without the hereditary predisposition I know of no

case occurring in wet localities, or caused by any particular work, or overwork.

Rice.—Low, damp, foggy situations engender and develop the disease. A person with consumption will die much sooner in such a situation than in a high, dry, airy location.

Wakefield.—A house exposed to damp east winds would promote, or at least aggravate and hasten its development.

Hammond.—Wet locations especially liable to cause it.

Hunt.—Damp, low and shady residences promote it.

Harris.—Inquiries that I had begun upon general sanitary questions in every town in the State of New York in 1859, as a Committee of the State Medical Society, prepared me to believe your opinions (viz., that soil-moisture is a prominent cause of consumption in New England, and probably elsewhere) were well founded, when you first mentioned them to me in 1862.

APPENDIX.

GENERAL ANSWERS NOT REFERABLE TO THE PRECEDING QUESTIONS.

Luce.—I have known one case, a young man, a close student and college graduate, who died of consumption, where there was no hereditary taint, but the parents were cousins.

Wakefield.—To sum up all, I should say that catarrhal symptoms often engender phthisis.

Hunt.—Crowded, ill-ventilated sleeping-apartments, sedentary employments, residences in crowded parts of the city. Warfare against dancing as an amusement for the young, insufficient clothing in cold weather, etc.

Bigelow.—Mr. and Mrs. M. had no tubercular taint, nor had their ancestors. Two of their three children were strong till after puberty, and then died of consumption. I can describe some other families with the same conditions.

Clary.—I have preserved no statistics of cases which have come under my notice, but will state some facts of my family history. My father, a clergyman, died of consumption, at the age of forty-nine: his father, a physician, died of consumption, at the age of sixty-five: an older brother of mine who had been quite vigorous and healthy while leading *an active out-of-door life*, after engaging in business in the city, confined to a store, and soon after, marrying, began to decline and died in about three years, of consumption, at the age of thirty: an older sister, *after teaching for some length of time*, began, at the age of twenty-eight, to decline,—had decided dulness at the upper part of left lung, with hæmoptysis. She left her school; went, in the fall of the year, to the home of a relative; took iron, etc.; lived well; rode out, at all temperatures; grew fat; and returned to New England the next spring, thirteen years ago; and has had, so far, comfortable health, in this respect; not married. Our mother belonged to a healthy and long-lived stock. Four other children (including myself) living active lives, are past middle life, with families.

Palmer.—I believe that "Consumption" is often the result of chronic pneumonia, sometimes of chronic bronchitis, and sometimes of hæmoptysis, &c. According to my observation primary tuberculosis does not occur in so large a proportion of cases as most authors (except the Germans) appear to teach. I have given much attention to this point within a few years past, and am very confident that in this locality (in Michigan) and also in Brunswick, Me., where I have observed and traced the history of cases coming

to clinics, very many originate in inflammation—perhaps it is safe to say, one-half. By “Consumption,” I mean wasting disease of the lungs.

Aiken.—Belonging to a consumptive family on my mother's side, she having died of pulmonary consumption at thirty-two,—her parents died of pulmonary consumption under forty,—I have, myself contended with infirm health all my life. I was brought up in Boston from seventh to nineteenth year, under the high-pressure system of the Public Latin School. My father had two sisters, one of whom has had to fight for her life against consumptive tendencies. She has taken two voyages, one to the Holy Land and one to Australia, India, Egypt and England, but is now alive and still fighting, bringing up a family of four children, from seven to thirteen years of age. A country practitioner, now, these dozen years, I know whereof I affirm. The only survivor of my mother's family is sixty-five years of age. I am not aware that he has ever suffered seriously from pulmonary difficulty.

Adams.—The disease is rare in Pittsfield. A few persons die of consumption, but the majority of cases which come under treatment in an early stage are very readily cured. Persons suffering from consumption coming here from lower-lying districts are very apt to receive permanent benefit from the change.

Holbrook.—In a practice of nine years I have had in charge, at death or previously, some fifteen cases of tubercular phthisis. My records show me two cases for 1864, one for 1865, three for 1866, three for 1867, one for 1868, three for 1870, two for 1871. Two of these were in young persons who began to work early in life, and were, until disabled by sickness, still in a cotton-factory. Three elderly females had the disease certainly intensified, if not caused, by the hard, monotonous toil necessary in a large family. One young man brought on his consumption by overwork, both physical and mental, in carrying on a country store, aided by great irregularity in meals and sleep. Another young mother broke down under frequent child-bearing. The balance were apparently caused from hereditary taint. But as my practice embraces a large number of patients annually, during the last six years I have given medicine to from fifty to ninety a week. My opinion is that consumption is *not* a frequent disease in my circuit of practice. My preventive measures are chiefly hygienic, especially insisting on out-of-door employment.

Jordan.—Fashion lays the foundation for more consumption than all other habits combined. The efforts of mothers to produce abortion upon themselves is another cause; but this is a part of fashion.

Hunt.—Indigestion from improper food, too much meat and gross food in summer, too little meat in winter, with new bread, rich cake and pastry, all the year round.

Ballou.—One should endeavor to avoid having consumption arise in his family by marrying a healthy partner. Corsets and thin shoes, or whatever deteriorates the blood or destroys nervous sensibility, are causes of consumption.

Robbins.—Consumption is caused by every means which in any way lowers the vitality of any organ: First, bad air in sleeping-rooms; second, any im-

purity in air of a locality which predisposes to any disease whatever, especially that (whatever it is) which causes typhoid to prevail. I do not agree with Dr. Bowditch's dampness theory; think it is the impurity associated with the dampness, rather than the dampness itself, which predisposes to consumption. I am certain that fogs which prevail on the eastern coasts of Maine and in Nova Scotia do not give rise to it, while I feel equally certain that those occupying dwellings on marshy or ill-ventilated localities, or on the sides of fresh-water streams whose beds are left dry, or partially dry, in summer, opposite the prevailing winds, are peculiarly liable to it. Third, changes in weather causing irritation, congestion and flabby condition of air-passages. Therefore, improper clothing and poorly-warmed houses. Fourth, poor or restricted diet, lowering vitality of blood, or deranging digestive system. Fifth, any cause whatever, predisposing to dyspepsia, e. g., bad cooking, wrong use of tea, coffee, tobacco, stimulants of all kinds, absorption in business, mental unrest, eating when weary, too many meals, too few meals, too hard work after meals, &c. In consumption I think one of two things must precede, either a *low chronic pulmonary inflammation* caused by exposure, or *dyspepsia*. I am inclined to the belief that dyspepsia must come first, or some degree of it, for I can hardly conceive of a case of consumption where the patient always had a good stomach.

Hopkins.—That consumption occasionally is, and often may be prevented from occurring in children hereditarily disposed, I have no doubt. I believe the especial means to this end are not one, nor few, but many; and that their *combined* action is, in general, essential to the attainment of the end aimed at. Foremost among these, I judge, should be placed what may be termed *discouragement of hereditary habit*. I mean by this that if the parents of the individual have attained the peculiar physical habit that tends to the deposit of tubercle under certain given conditions, social and professional, the children should as soon as possible be transferred to conditions that shall bring into habitual exercise other qualities, i. e., conditions contrastive, and therefore re-active as regards the inherited crisis, e. g., that which is by inheritance intellectual and luxurious may, while duly watched and nursed, be educated over to that which is physical and hardy. The same contrast from native conditions can be measurably carried throughout the social scale. There can be no more potent alterative of temperament and nutrition than this. And as to climate, the systems of these individuals are so impressionable that much is often attainable by mere transference from city to country, from valley to highland, &c. But these stages are requisite *early* upon the first *suspicion* of taint. The remark of a musical artist to an accomplished pupil whose studies were completed, "Now go and learn the cooper's trade" is in point here. The second great means upon which I beg leave to touch is, a more happy and thorough dissemination of physiological theory; a better indoctrination of families and schools in all those great principles upon which are based the laws of health, and upon which the physical structure of society will rest whenever the members of society shall be generally intelligent on these matters. Physicians, both in the family and in the community, have great opportunities here which are sadly ignored by too many. The texts-books in physiology adopted by most of the schools are unsatisfactory. But in the *family*, not in the *school*, must we look for the pursuit of that good study, and for the fruit of it. I am persuaded that most generous and universal use of milk and of unbolted cereals is of cardinal importance, and, if habitual, would be of inestimable value in

conjunction with meats and the saccharine fruits and with butter. Pastry should be excluded. It is possible, too, that cod-liver oil has been too long acknowledged as king; and that it will serve better as adjuvant. In a case not consumptive in which digestion and assimilation were extremely imperfect, I have found so much satisfaction from the use of pepsine and lactic acid, combined with soluble citrate of bismuth and sirup of orange-peel, that I am induced to allude to it here, as being a digestive agent worthy of trial in cases that can afford the expense. Another suggestion is, the adoption of means for inducing ozonized oxygen in apartments and localities. It seems abundantly proven that simple ventilation, at least in cities, does not supply a feeble organism with its requisite atmosphere. But the air becoming, as it were, vivified by ozonization, becomes at the same time disinfected of whatever may have been deleterious. The contribution of well-regulated and restrained athletic sports toward the end now discussed, needs no more than an allusion. The universal *croquet* tempts to its pursuit in low-necked dress and thin slippers after dew-fall; I know of no other objection to it. Questions nine to eighteen have all reference to influences of an exhausting nature, and might, with more or less qualification, all be answered in the affirmative.

The following, from an eminent London physician, I have been unwilling to divide under the different questions:—

Third question: In a large family, a member of which I passed for insurance, where the hereditary tendency existed in both parents, the elder children, being poor, had to rough it, and remained healthy; while the younger, having meanwhile become wealthy, were coddled, and so became consumptive. In another case a sea-life appears to have checked an early tendency to tuberculosis of lungs.

Eleventh question: Dry grinding produces fibrous phthisis—"grinder's rot." Wet grinders do not seem to suffer, at Sheffield.

Tenth or twelfth question: The most pernicious overwork I know of in respect to the production of phthisis, is that of the Cornish lead-miners, who after their day's work, have to climb an exhausting number of ladders. They become consumptive in ordinary pits; but where a "man-engine" is used they are preserved.

Fourteenth question: The most frequent of all causes among all classes in such a population as that of London, and probably the most powerful cause, for it acts even in spite of hereditary health. The course of events connecting sorrow of mind with disease of body, would seem to be—slow breathing, defective innervation, and consequent weak action of the heart, slow circulation in the stomach, imperfect supply of gastric juices, anæmia, malassimilation of fibrine, formation of tubercle.

Fifteenth and sixteenth questions: A balance is struck; pregnancy seems to check, child-birth and suckling to hasten consumption.

Seventeenth question: No; harlots are healthy.

I hope, Dr. Bowditch these answers are what you require. I do not exactly see what action a State can take in the matter, except by assisting everybody to be as wise, joyous, prosperous, as well fed, and as pleasantly situated as circumstances will admit. Perhaps they might in addition make celibacy compulsory in ascetics in order that the anæmia of parents may not produce tubercle in the children (see "Galton's Hereditary Genius"). But I suspect

that would be too violent an infringement of personal liberty for Massachusetts.

The following comes from a well-known physician in New York :—

Parker.—Third question : Such means as are essential to a perfect state of health—first, such food as makes perfect blood, as milk ; second, breadstuffs ; third, ripe fruits ; fourth, meats. These must be taken in proper supply and at definitely prescribed periods. Where more is taken than is perfectly digested harm is done. When taken too frequently harm is done ; that is, an imperfect digestion is the result. Again, the *health balance* must be maintained ; if a given quantity is taken into the system every twenty-four hours, an equal amount must be excreted, or thrown off from the system ; otherwise, effete material remains and the balance is disturbed. The effete material is worked off by the *lungs, the skin, kidneys, &c.* A pure and dry air the lungs *must have* in order to perform their part of the work. The skin must be clean, and active physical exercise is essential to the healthful physical working of all,—lungs, skin and kidneys.

Fourth and fifth questions : Yes ; any circumstance unfavorable to the soundness of the system tends to induce consumption.

Sixth question : In some cases of strongly-marked consumptive diathesis it is overcome by alcohol, and the alcoholic diathesis takes its place, and life, such as it is, is prolonged.

Eighth question : There are cases of incomplete digestion in which consumption tends to occur. Now in these a *limited* amount of brandy or rum, taken *with* the food as *kindling material* in starting a common fire.

Sixteenth question : Child-bearing checks for a time, but does not cure. During gestation and lactation the appetite is often good and the digestion perfect.

Nineteenth question : Exposed locality of dwelling to sun and air, and on diluvial soil, is anti-consumption. I have very little confidence in any medication. Air, sun, and all the muscular exercise the patient *can endure* ; if these induce appetite and digestion his chance for improvement, if not for recovery, is good.

This comes from one equally eminent resident at Chicago :—

Davis.—First question : I have no doubt but that consumption is often the direct result of hereditary influence. Third question : I am also fully of the opinion that children so predisposed can be made healthy, and avoid the disease by special physical training, begun young, and continued through active life, aided by dry, pure air. Fourth question : I am also fully satisfied that the habitual use of alcoholic drink, whether to the extent of drunkenness, or not, favors the development of consumption, both in parent and child. Several years since, I examined this subject carefully, and for six years kept records of cases and facts relating to it, the results of which I communicated to the Illinois State Medical Society several years since. I do not think total abstinence has any marked influence, except as it may be associated with good air, proper exercise, and food. In regard to questions nine to fourteen, I should say that consumption is rarely, if ever, caused by simple excess of mental or physical labor, but the confinement and over-

crowding of schools, neglect of physical exercise by students, the confinement and bad air in which some trades or occupations are carried on, undoubtedly cause a very large number of cases of consumption.

Seventeenth question: Excessive sexual intercourse or inordinately rapid child-bearing, like any other causes of debility, might hasten the development of consumption where the predisposition exists. Eighteenth question: The facts relating to the question of contagion or infection are so contradictory that I hardly have a positive opinion regarding them. Nineteenth question: If you mean by "exposure" of dwellings locations freely exposed to winds, and isolated, I think it has little, if any, effect upon the production of this disease. Twentieth question: Wet localities, damp rooms, damp air, and insufficient or imperfect exercise of the muscles of the chest and trunk of the body, are the most prolific causes of consumption.

The following letter from Dr. Manson, of Pittsfield, suggests important considerations in regard to the effect of diet, and especially of the free use of pork, even when swine are raised upon the farm where the family resides, and where the animals may be supposed to have been fed in the best manner. At any rate we may believe that they are not slaughter-house cattle, nor wholly offal-fed. But still more do I think that the three families tend to suggest the idea of the influence of contagion, or perhaps of improper food; and in support of this view I refer to Dr. Manson's second letter of later date, written in answer to one from myself, asking further information on the subject:—

PITTSFIELD, Maine, August 6th, 1871.

DR. BOWDITCH: *Dear Sir,*—I know of no better way to answer your inquiries than by relating, to the best of my recollection, the histories of certain families which have come under my professional observation. First, the family of S. J——, Esq., living in the town of P., came under my care some fifteen years ago. Mr. J. and wife were both from hardy pioneer stock; both living at the present time. Their parents, on both sides, lived to a good old age, according to the best information I can obtain. Said J.'s family consisted of three sons and five daughters. The eldest son died before my acquaintance with the family, I believe of consumption; both the other sons are now living in the State of Minnesota, I think, where they went years since on account of irritable lungs. They visit this State occasionally, but are feeble men, strongly inclined to phthisis, due I believe, to the incipient stage thereof. The daughters were named respectively, Mary, Lucia, Lizzie, and Martha. Lucia, first, after two years' suffering, died of consumption aged about twenty-three. Lizzie began to falter somewhat before the death of Lucia, but, in accordance with my advice, spent two winters—one in New Jersey and the other in Tennessee—with apparent benefit; lived some four years, and died aged about twenty. Two or three years subsequent to the death of Lizzie, Martha sickened in the same way, and died in about one year, aged about eighteen. About this time Mary, whose health had been, for some time, poor, began to fail rapidly, and died in about one year, aged

about thirty-five. *Location.* The house was on a hill, where all the surrounding surface was high and dry—much more so than their neighbors'—no unusual dampness in the cellar, drainage good all around; house large, two-storied, high-posted; rooms large and airy. Mr. J. was an independent farmer, worth some eight to ten thousand dollars; seemed anxious to do all he could for his family; had a *good orchard*, with *plenty of fruit*,—diet same as farmers in the State usually have. Their animal food consisted principally of *pork* of his own raising; family always comfortably clothed, the general surroundings were such as to conduce to happiness, nice flower-garden, etc., etc. The north and west sides of the house were protected by tall fir-trees, some thirty or forty feet in height, with thick foliage standing quite near the house—an artificial evergreen forest. How much this might serve to keep the back side of the building damp after a storm, might be a question.

The following table shows at a glance the history of the deaths by consumption in this family:—

S. J. & wife, both hardy pioneers, and their parents were long-lived.	{	1. Son; think died of consumption.
	{	2. Son; now living in Minnesota, where he went because of an irritable state of the lungs; he visits here occasionally; is a feeble man, strongly inclined to consumption.
	{	3. Son; believed to be in the incipient stage of consumption.
	{	4. Daughter Mary; d. of consumption, <i>æt.</i> 35, after about a year's illness.
	{	5. Daughter Lucy, d. of consumption after two years' illness, <i>æt.</i> 23.
	{	6. Daughter Elizabeth, d. of consumption, <i>æt.</i> 20, after seven years' illness.
	{	7. Daughter Martha, d. of consumption, <i>æt.</i> 18, after one year's illness.
	{	8. Daughter.

All the sisters occupied the same well-ventilated room; but they successively took care one of the other.

Second Family.

Wm. C. P.— and wife, both living, aged about 55. The father of Mrs. P. is living—88 years old—smart and active; can split wood, care for cattle, &c.; says he never was sick. The mother of Mrs. P. died some four or five years ago, of old age, about 82; had suffered but very little from sickness during her life; had borne some twelve children, most all of whom are now living, *none having died of consumption.*

The father of Mr. P. was a tough, hardy man, never sick; died accidentally, aged about 60. His wife lived until some five or six years ago, and died of old age, nearly 90.

Wm. C. P. had six children, but one of whom is living,—*all died of consumption.* The eldest, a daughter, now living; married; has borne one child; is now in incipient phthisis; she is some 30 years of age. All the rest died between the ages of 16 and 22.

The house is situated upon *sandy* soil, at about the same elevation as those of his neighbors, a little higher than the village near which he lives; situa-

tion quite pleasant; soil so sandy that 'tis never wet, even during a storm; cellar was, as he says, never known to be damp—so dry, in fact, that the fine sand on its bottom has been so like ashes, and so troublesome, that he has sincerely contemplated cementing it on that account. Has always been in comfortable circumstances, having inherited a farm from his father, a very parsimonious man; family has been comfortably clothed, and fed from the farm. Animal food used has been, like the former, of *pork of his own raising*; varieties or extras never found their way to his table.

Tabular Summary.

W. C. P. & wife, both living, æt. about 55. Both of the parents of each lived to old age, strong and hale.	{	Children. One daughter in consumption now, All the rest (five in number) died of consumption between the ages of 16 and 22. The family lived on a dry soil; had little variety of food; meat consisted chiefly of pork, from swine raised on the place. The sisters slept with one another.	Grandchild. “
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Third Case.—W. S—, of this town, a hardy, tough man, living, aged 65; wife about the same age, died a year ago of consumption; a very hard-working woman, with no hereditary taint on either side; seven children; all but two have died of consumption; they are the youngest, but are now suffering from the same disease, aged 18 and 24. This family has lived until within a few years in comparative poverty. They may not have really suffered from the *quantity* of food, but I think they have from the *quality*; they have been coarsely, sometimes scantily, clad. *The meat used by the family has been pork.* The house is situated on the top of a hill, higher than more fortunate neighbors; location quite dry, but perhaps not *so* marked in this respect as the two previous ones, yet not wet; is dry more weeks of the year than most of their neighbors'. Deaths have occurred between 18 and 30 years of age. Two daughters have married and have children.

These three cases occur to me at present as striking examples of phthisis occurring in dry and elevated localities in the absence of hereditary tendencies. One fact I should have stated; viz., that Mrs. J. and Mrs. S. were *very hard-laboring women, particularly so during maternity, overtaking themselves almost daily*, as they acknowledge. Possibly this may account in part for the feeble constitutions of the children.

I subsequently wrote to Dr. M. asking more details in regard to the situations of the houses of these families, &c., and received the following reply:—

I have gathered some *facts* concerning your inquiries, believing that theory—hypothetical—had governed full long enough. I have lately visited the family of W. C. P., of whom I wrote you, and found the cellar *just as represented, dry like ashes—sandy*—never known to be wet soil around the buildings—sandy—perfectly dry. Mrs. P. gives the following history of her family—prefaced, however, with the assurance that consumption is, and was unknown in her father's family, and also in that of her husband. 1st. Her eldest son died, in the West, from diseased lungs, aged twenty-four; as she could not see him after he sickened, she can tell but little concerning the

case. 2d. S., daughter, who commenced to fail, when sixteen, and died at twenty-two, being sick during the whole interval. 3d. F., daughter, died in nineteenth year, after two years' sickness: P., son, died, aged 18, after one year's sickness: L., daughter, died, aged seventeen, after two years' sickness. The sisters slept with each other to quite an extent, but in an open chamber, *well-ventilated*. P., always, or for years, roomed alone, and practised sleeping with windows lowered at the top. The mother feels sure that none of her children suffered from masturbation. When young were strong and healthy. All wore flannel next the skin—*home-made*—the greater part of the year—had *plenty of pork and mutton, with milk, butter and eggs, more or less fruit, etc.* Diseases, in each case, seemed to commence in the *throat*. Lost much strength and became emaciated, in each case, before commencing to cough or expectorate; a great similarity in all the stages of each case. In case of J. family, the sisters each cared for the other successively, and as near as I can learn, occupied the same room, *well-ventilated* and *large*; further than this I can add nothing concerning them to my former report. The S. family cared for each other, and probably some two occupied the same room most of the time. I long since embraced the opinion *decidedly* that consumption *can be communicated*, and in fact, is quite likely to be, where one occupies the same bed with a consumptive. A striking illustration has lately come under my observation: the patient died last week. He was born in Scotland, of hardy parents who moved to this country some eighteen years since. His mother gave me the following history:—

"I am sixty-four years of age; my husband is living, aged sixty-six; neither of us has ever been sick; have seven children, all hardy; never heard of consumption amongst the family connection, on either side. Robert (deceased) was thirty-three years old—boss-weaver in woollen-mill—always *hardy* and *tough*—married a Yankee, about three years ago—wife was sick when he married her—*her family was consumptive*. She had cough—after a few months, night-sweats, bad. Told Robert to sleep in another room, but he said he would not leave her. In fifteen months she died. About six months before her death, Robert began to lose his appetite, and falter. I tried again to persuade him to take a separate room, but he would not leave his wife until about three months before her death, when it became necessary to employ watchers. He had then commenced to cough and sweat nights; and constantly failed, till last night, when he died. He was a strong constitution man until he took sick."

One more case on this point: Mr. G., of a family of six children, *all hardy*—no consumption amongst connection—married a wife from a consumptive family; who, after a few years, sickened and died, after about eighteen months' illness. Mr. G. occupied the same room and bed during the first year of her sickness; his health then commenced to fail: got a cough—soon, night-sweats—and died, some six months after the death of his wife; his being the only case of the kind in his father's family. This case occurred early in my professional life, and made a decided impression upon my mind. Other cases I could enumerate, but these may be sufficient cause for my opinion as to the *communicative* quality of the disease.

I will mention that, in conversation with Mrs. P. as above, she remarked that *scarlet fever* and *diphtheria* were the causes of the disease in her family. As I attended them through these diseases, and knew that the same neighborhood was generally afflicted with those diseases at the time her children were—and some were much worse—I asked her why her neighbors' children

were not affected in the same way, some of whom were more severely attacked with those diseases, than her own children. She answered, "I cannot tell."

Now, my dear sir, I repeat that I am firmly of the opinion, after about twenty years' observation in this *consumptive district*, that this disease is *surely communicable*, and it would be almost impossible to convince me to the contrary. Concerning the *original* exciting causes I am at a loss; am sometimes inclined to blame scrofula for the whole thing, and if you, my dear sir, are satisfied that scrofula can be propagated by *inoculation*, why not by *inhalation*? I believe it is so produced by inhalations of exhalations from the lungs and body—but this opinion is somewhat timidly expressed by an obscure country practitioner, striving for reliable information in any matter conducing to the physical betterment of suffering humanity.

In connection with the use of pork, I submit the following statements from Rabbi Dr. Guinzburg, a gentleman well acquainted with the various congregations of Hebrews in this city. Under date of October 29, 1872, he writes, in answer to some questions I proposed to him, the following replies:—

1st. The number of Jews living in Boston, is about 5,000.

2d. There certainly have not died of consumption, during the last five years, more than eight or ten Jews in the various congregations.

3d. It is very seldom that any Jew eats pork.

Dr. G. adds, "In order to give you as good information as possible, I did not rely upon my own knowledge, but made particular inquiries of those whom I thought able to give me good information upon this subject."

If Dr. Guinzburg's data be correct, they show a very great immunity from consumption on the part of the Jews, compared with the citizens generally, as will be seen by the following comparison between these numbers and those procured from the Registration Reports published by the State. In the Report published 1869, page 64, we find that, for the five years preceding 1869, the annual average of deaths by consumption, was 338 for every 100,000 living. These data from Dr. Guinzburg and the State Report, give the following table:—

	Proportions of deaths to 100,000 living.
All religions,	338
Jews,	40

These statements from Dr. Guinzburg are confirmed by the following letter from Dr. A. Haskins, of this city. Dr. Haskins is connected with one of the Jewish benevolent associations for the benefit of the sick. I sent to him similar questions and make the following extracts from his reply :—

“I am generally employed in about sixty (60) families (Jewish). I have had these families under my care for two and a half (2½) years. During this time I have seen but one (1) case of consumption. I have averaged among these sixty families, about two visits daily. In my other Jewish practice, which is not inconsiderable, I have in this time (2½ years) seen two (2) cases of consumption. * * * * I am sorry I have no statistics whereby I could compare the two peoples (viz. : Jews and Christians). I can, therefore, give you only my impressions. I should say that I find consumption less frequent among the Jews than among the Christians; this would be my own impression without any data to fortify it.”

The following, from Dr. Waterman, also sustains the same idea :—

BOSTON, November 2, 1872.

DEAR SIR,—Excuse my delay in answering your note. I can give you no statistics, and fear that my information will prove to be of a negative character. I cheerfully give the following opinions, however. First, I have attended four charitable associations, numbering about 40, 50, 60 and 100 families. At present, I only attend one, containing 100 families, and on which I average a fraction over one visit a day. I have, besides, many private families among the Jews. Second and third questions.—I have attended but few cases of consumption, and I think the disease is not so prevalent as among Christians. I have seen some quick and rapidly fatal cases. Fourth.—The older Jews invariably abstain from pork, and most of the younger ones, especially those from Germany; those born in this country, also the English and Dutch, are not so strict, as a rule, in regard to this matter, nor in their observance of the fast and other holy days. I never knew a Jew to eat pork, *as such*, but I have seen them eat ham. I have met with two cases of tape-worm, in Jews, but know not whether the parasite came from pork, or beef, or other meat.

Truly yours,

THOS. WATERMAN.

Certainly, as it seems to me, these replies from Rabbi Guinzburg and Drs. Haskins and Waterman, indicate that consumption is rather rare among the Hebrews of this city. I cannot think that any physician in New England practising among Christian families, can make a report like that of Dr. Haskins, viz. : That in a practice so extensive as that which Dr. H. has had, and extending over two and a half years of

time, only three cases of consumption should have been prescribed for.

This apparent infrequency of consumption among the Jews, induced me to examine further, and a friend calls my attention to the fact that this people has not suffered from various diseases as other sects have. For example, they suffered, in the Middle Ages, but little from the plague: the epidemics of typhus in 1505 and 1824 troubled them but little; croup is also said to be rare. Boudin,* (from whom the above facts are obtained) gives the following for the relative liabilities of Schlaves, Germans and Jews, in reference to "plica."

29 ill, in 1,000 of Schlaves.

18 ill, in 1,000 of Germans.

11 ill, in 1,000 of Jews.

On the contrary, they are more afflicted with idiocy and insanity, in Denmark, as follows:—

3.34 insane or idiotic among Catholics.

5.85 insane or idiotic among Jews.

Unfortunately, Boudin says nothing in regard to their liability to consumption. This subject is altogether too wide for further remarks, at this time, but whilst these pages are in press my attention is called to the following facts mentioned by Dr. Stallard:—†

"The mortality of Jewish children under five years in Prussia is much less than of those in Catholic families. * * There is no hereditary syphilis, and scarcely any scrofula to augment the mortality. * * The mother undertakes no work that takes her away from her children. * * The average duration of life at Furth is twenty-six years amongst the Christians and thirty-seven among the Jews. * * At Frankfort, the Christians average thirty-six years and eleven months; the Jews, forty-eight years and nine months. In Prussia, the Christian population requires fifty-one years to double itself, but the Jewish population will double itself in forty-one and a half years.

* *Traité de Géographie et de Statistique Médicales, et des Maladies Endémiques.* Paris. Baillière, 1868, vol. 2, p. 141.

† *London Pauperism amongst Jews and Christians, &c.* By J. H. Stallard, M. B., London. Saunders, Otley & Co., 1867. London.

Wakefield.—Intemperance, according to my observation, causes death by apoplexy, hepatitis, ascites and anasarca, combined with hepatitis or erysipelas, &c.

Jarvis.—Some years ago when I was in practice, I had complete knowledge of all the ailments of a considerable number of families. I divided them, or rather their members, into two classes—the temperate and the intemperate—and compared their number of days of sickness for two or three years. I added to the intemperate sickness, all others caused by intemperance (as injuries to passengers, caused by overturning of stage-coach, driven by a drunken stage-driver). The result was 14 per cent. more days, almost, per person, among the intemperate.

Haskell.—There is one cause of consumption, which, I am confident, plays an important, though an insidious part, to which I have never seen any allusion made.* I have in mind at least four families, and more single persons, who were too proud to acknowledge, and too fastidious to endure, the sulphur purgatory, and who have harbored and nursed the itch until it became chronic, and either the irritation of the skin, or the roundabout methods they adopted to deaden it, have so broken the general health that they have rapidly gone into consumption. I have a strong impression that this odious evil is a frequent precursor of the more fatal malady. In the case of many a college student, whose untimely death has been lain at the door of *hard study* the itch has been robbed of its share of credit.

Collins.—I am a native of America; was graduated in medicine in '43; was connected with the public medical institutions of the city for ten years; served three years in the hospitals. In 1849 my health gave way, and consumption was developed. I left the city for the Island of Madeira, where I spent the winters of '49 and '51, four months, on the island. I then went to Spain, France, and England; was abroad one year. On my return I desired to find some dry, elevated region, where I could breathe better and cough less than in New York city. Having tried various parts of the United States, I finally selected the south-west corner of Massachusetts, eighty miles from Long Island Sound, 850 feet above tide-water, protected on the north and east by a beautiful mountain range. The Housatonic River flows rapidly through this portion of the valley. No swamps, nor low ground; an abundance of pure, soft water. Now this is the same relative protection that the city of Funchal (Madeira) has, and Malaga, Spain, and Nice, in the north-west part of Italy. The natives here (in Great Barrington) are healthy, and I very seldom meet with a case of consumption which originates in this region. I have been here twenty years, and have long since gotten rid of my pulmonary trouble.

The following letter, from Dr. Bartlett, suggests the importance of trying to get a radical change of climate or of telluric influences, by even a small change of location. Many dread the exile from home required by a Southern or Western resi-

* Unless the psora of Hahnemann be an exception, which he makes the cause of all diseases.

dence; many more are too poor to travel; but very many may be able to move the short distance from a wet place to a dry, warm slope. And Dr. Bartlett's letter suggests hope to such:—

CHELMSFORD, February 27, 1872.

DEAR SIR:—Knowing your interest in the influence of locality upon tubercular disease of the lungs, I have thought that it might not be uninteresting to you to receive the history of a case which I have been watching for some years, in reference to this point. A young lady of this town, whose mother died of rapid tubercular disease of the lungs (said to be congenital), and whose father died from pulmonary abscess, resulting from pneumonia, the recurrence of the abscess being frequent for seventeen years, manifested in a marked manner. All those indications which we at times notice in the young female seemed to show that her life would early be brought to a close, as her mother's had been. So strong were these indications that I earnestly advised her step-mother not to sanction an early marriage; but love proved stronger than preaching, and she married and went to live upon the highlands, known here as Robin's Hill. The result has been that all the symptoms of phthisis have entirely disappeared, and it would be difficult to find a healthier woman than she is now, after having borne three robust children. In the course of my inquiries I have learned one fact which it might be desirable to know, viz.: that no case of consumption has ever occurred in any of the families living about this highland. I think that many families, living in dread of the ravages of that terrible destroyer, might here find robust health, instead of being driven away from home to Minnesota and other wild regions of the West. At any rate, I think the experiment might be worth trying, and with every prospect of success. I know that in many cases patients dread the going away from home and its comforts, and if we have at our doors places where health and home may both be secured, at a cheap rate, many a life may be saved without the necessity of an expensive and tedious journey.

Yours, with respect,
JOHN C. BARTLETT.

I submit, almost entire, the following, from one of the oldest and most respected physicians of Maine:—

TOPSHAM, ME., November 19, 1871.

DOCTOR BOWDITCH: *Dear Sir,*—Since receiving circular of July I have reflected much upon the queries and suggestions therein proposed, but am fearful of my ability to impart any decided benefit to the cause you are engaged in, by any practical responses from my own experience. I have resided between fifty-one and fifty-two years in this town. In that time I have witnessed almost every form of consumption, and almost everything else which usually falls to the lot of a medical man. Beside my home practice I had a tolerably wide circle of consultations in Lincoln, Cumberland, and several other counties upon the eastern shore, and the regions watered by the Androscoggin and Kennebec Rivers. I feel strongly impressed with the belief that consumption, typhus and typhoid fevers are, in proportion to our population, much diminished from what they were half a century ago; so, too, are colic and cholera morbus. So far as my experience and personal observa-

tion go, consumption is far more frequent among the females than the males. The cause of this, no doubt, is to be looked for in the different habits of the sexes, chiefly in regard to out-of-door life, and also to the stronger sympathetic and emotional character of women, especially young women. I have been looking over my notes and diaries for a long time back, and I find the general tenor of my belief to be, in relation to the causes of consumption and its remedies, all in one direction. As Dr. Bowditch suggests a wish to receive "bits of family and personal history," I will, as briefly as possible, give that of the P. family, of this town, a name well known in the Atlantic States, North and South, and in Western and Northern Europe, wherever a cottonship was able to discharge her freight. It will epitomize a large class of cases of consumption. About one hundred and twenty years ago a young married man moved into town, and there were born to him, I think, five sons and three daughters; the sons were R., A., T., J. and D. The sons all lived and died in town, and in the immediate vicinity of where they were born: one of the sisters also; the two others lived and died in the adjacent town of Bowdoinham. I am not positively cognizant of the mortuary record of the families of the two sisters who lived out of town, but I am of the opinion that two or three cases of consumption occurred among them.

The following table, drawn up from the verbal statements of the writer of the letter, presents a more distinct view of the hereditary character of the process of consumption in this family than can easily be obtained from the letter itself:—

Original Stock.	Children.	Grandchildren, habits, conditions, &c.	Great Grandchildren.	Great Great Grandchildren.
This family moved into the town 120 years ago and had five sons and three daughters.	Robert died upwards of 80, of old age.	Son, died of consumption. Son. Daughter (Mrs. Hunter), died of consumption. Daughter. Daughter.	Twelve children, 5 died infants, 7 adults. One daughter far advanced in consumption, married cousin, both husband and wife died of it.	Daughter consumption. Daughter consumption.
	Acton, died, not consumption.	Several children, none consumptive.	All his children alive and well.	
	Thomas, no consumptive signs, died at 80, of cancer; wife died of consumption.	Son, cough, hæmoptysis, &c., but lived to 82, active; his wife grew stronger child-bearing. Son, 82, alive and well. Son, asthmatic all his life, alive at 71. Daughter, single, died of consumption. Daughter, married, died of consumption. Daughter, married, died of consumption. Daughter, single, died of consumption.	One man child alive and well, age 50.	
Joseph, drowned. David, died, consumption. Daughter, Daughter, Daughter,	Son, } twins { consumption. Daughter, } Daughter, consumption, Daughter, typhoid fever. Daughter, puerperal fever. Son, consumption, married cousin. Son, sea-captain, alive, age 65.	About the precise history of two, not much known, but thinks one or two cases of consumption among them. No consumption reported in the third.		

"The summing up of the teachings of these three generations of the P. family is as follows: First. The first question that naturally presents itself, is, Does this family history furnish evidence of hereditary predisposition to consumption? I would answer, Yes. Perhaps some would cavil at this, and ask, Why has not the family of A. P., with a larger family of sons and daughters, contributed to this consumptive catalogue, as well as those of his brothers, Robert Joseph, Joseph Thomas and David? It is not necessary, I take it, that every individual or every family should have such an obituary to establish the generally received truth of what is here affirmed. It has been my lot to have resided more than half a century in a community, where, eighty-five years ago, a family lived, and intermarried with cousins, in which insanity had shown itself. Among their descendants we find many families totally exempt from this terrible inheritance; while every now and then a case crops out in a branch which for generations, had not produced a person who has had insanity. I do not, of course, deny that other elements enter into the problem, and which have had a vast controlling power in bringing on or working out consumption,—moral causes, for instance; particularly, depressing influences. In T. P.'s family, the mother lived to see her sons come to manhood's estate: of the four daughters, all of them were in early womanhood at the decease of the mother,—the oldest was about twenty-four, the second, twenty-two, the third, eighteen, and the youngest, fifteen. The mother was a strong-minded woman, and in raising up and training her family, had the larger share of parental influence. Her death was, of course, a heavy blow. The boys, however, were just going out into the world, and mingling energetically in its busy scene; and by this means were somewhat removed from that extreme poignancy of grief at her death. Far different was the case of the daughters,—trained up as they had been, and learned to look and lean affectionately upon their mother for counsel, for sympathy and support, they felt her death as an irreparable loss, and so it was in truth; and not unlikely from that day they began to droop. The old homestead, to be sure, was still the seat of a generous hospitality; but to these gentle spirits, *their world* was the old hearthstone and the family circle; but what were these without their mother? And their brothers, also, gravitating, from other attractions, into different spheres.

These girls, when I first knew them in 1820, were neither sickly nor scrofulous,—they were smart, energetic, and, to all appearance, healthy. The eldest possessing the good housekeeping capabilities of the mother, took her place in the family. The second daughter was the most fragile of the sisters; tall and graceful, her features were somewhat pallid perhaps. The third daughter (she who died first) was accounted the most intellectual. Four months before her death she was, to all appearance, healthy; her facial expression was good. The roses and the lilies showed a fair admixture; and her activity and muscular movements betrayed no ominous indication of disease. The first and second daughters, Dr. N. Smith visited with me, several times; this third daughter, I believe I mentioned, became brain-affected, I presume from tubercular deposit. The youngest girl, had it not been for the sad death of her sisters, would, I think, have been the most brilliant.

Second. As to the therapeutical department, if I may say a few words. It would seem as if the most exhaustive efforts have been made to discover the means, as far as the *Materia Medica* is concerned, to combat consumption and to cure it. The four quarters of the globe, and every island, ocean and sea (save the yet unrevealed open Polar sea) have been ransacked for material aid. But for long, physicians have been much inclined to abandon

drugging. The Homœopaths still professedly have faith in copious dilutions; the Hydropaths in cold water: then there are the Mesmeric doctors, the vegetable Eclectics and the Electric experts in a medical way; all of these have pushed their claims for success, but the more intelligent the masses of our people become, the less will their faith be in these interested claimants for public notoriety. But aside from such as rest their claims for skill, upon a collegiate diploma, there is a vast horde of disreputable men who have entrenched themselves around the Patent Office, and who are constantly sounding their trumpets in the columns of every newspaper. There are very many thoughtful men, *outside, and in* the profession, who strongly believe that the way out of this labyrinth of professional mysticism and superstition will yet be pointed out by some philosophical and practical medical man. Perhaps the time is far distant when the correct pathology of what we call consumption, will be determined and accepted. But may not the laws of the imaginary Hygeia become so truly and faithfully established as to demonstrate the sources of danger, and thus enable one, who devoutly looks to his pathways in life before he leaps, to escape the danger of destruction? Some, perhaps many, of our recognized diseases may disappear; and new ones takes their places, perhaps, so that (if I may use the terse and sententious language of Bunyan) while "one escapes to die, another is taken to live."

Very respectfully,

Your humble servant,

JAMES MCKEAN.

The following facts and opinions are contained in a letter from Dr. C. G. Rothe, of Altenburg, in Saxony, Germany:—

Of twenty-seven cases of pulmonary consumption which came under my care during the last two years, there were

Caused or promoted by hereditary influences,	4 cases.
" " " " trades (1 miller and 4 cigar-makers),	5 "
" " " " exposure to cold and damp weather, and by damp and cold dwellings in tenement- houses, void of sun and air; and in shops, 18 "	

The latter 23 cases being of the age from 21 to 46 years, all of healthy origin and of good health up to the time of the onset of the disease. All of them were taken suddenly by a severe, obstinate catarrh, complicated with fever, want of appetite and emaciation, while the physical signs showed chronic inflammation of the surrounding portions of the lungs, mostly in the upper parts, but in some cases in the lower lobes, while the tops remained intact. This inflammation used to spread more or less rapidly over the whole side of the infected lungs, sometimes over both, and ending, in all cases but four, in the "caseous degeneration" of the parenchyma of the lungs and death after three to six months. In four cases the progress of the disease has been checked to the present day, through the inhalation of carbolic acid with tincture of iodine; in three of them all the physical signs have gradually disappeared, and their health seems to be totally restored; the fourth, a married woman, 32 years old, being constantly exposed to damp and cold in a

hat-maker's shop, had two relapses, and is now, two years after the first severe attack, lying down hopelessly. The inhalations of the carbolic acid had no beneficial effect on the hereditary cases of *tuberculous* consumption; and in those cases of inflammatory origin, where miliary tubercles set in, in the course of the disease, and where the disease spread below the insertion of the bronchial tubes, internal remedies such as cod-liver oil, hypophosphates, all proved of no avail. Drunkenness, sexual indulgence, and overstudy have not been noted amongst the causes of the disease. In children the disease has not been observed, except in one girl three years of age, who, two months after a severe attack of diphtheria, of which she was cured by the carbolic-acid treatment, died after nine days' illness with all the signs of acute tuberculosis. I have excluded this case from the above table because the denial of the post-mortem examination left the diagnosis uncertain. Among the four cases of hereditary tuberculosis there is one of a pregnant woman, in whom, during the stage of pregnancy, the disease developed itself with great rapidity, progressing, at the same time, in the lungs and larynx, so that she was for six weeks totally aphonic. She died three days after her delivery. I am of the opinion that much can be done towards the prevention of this fearful disease by close attention to every "slight catarrh," at its first onset.

C. G. ROTHE.

ALTENBURG, October 31, 1871.

The following facts and opinions are contained in a letter from Dr. G. Roth, of Altenburg, in Saxony, Germany:—

Of twenty-seven cases of pulmonary consumption which came under my care during the last two years, the following

- One was produced by bacillary tubercles.
- Two (1 father and a son-in-law)
- Two were produced by cold and damp weather, and exposure to cold dwellings in winter.
- Two were produced by cold and damp weather, and exposure to cold dwellings in winter.
- Two were produced by cold and damp weather, and exposure to cold dwellings in winter.

The latter 12 cases belong to the hereditary form of the disease. All of them were taken originally by a severe catarrh of the larynx, complicated with chronic inflammation of the surrounding portions of the lungs, resulting in the formation of tubercles in the lower lobes, while the first 15 cases were produced by cold and damp weather, and exposure to cold dwellings in winter. The inflammation first spread over the whole of the larynx, sometimes over the trachea, and ending, in all cases, but in the "hereditary form" of the pulmonary consumption of the lungs, and death afterwards in six months. In four cases the progress of the disease has been checked by the treatment, through the inhalation of carbolic acid with frequent rest; in three by the use of the physical signs have gradually disappeared, and the health is now fully restored; the fourth, a married woman, 32 years old, had previously exposed to damp and cold in