LETTSONIAN LECTURES ON THE INFLUENCE OF CLIMATE IN THE TREATMENT OF PULMONARY CONSUMPTION.

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LECTURE II.

MR. PRESIDENT AND GENTLEMEN,—I would now draw your attention to the isothermal lines of Great Britain and Ireland, not only as regards the climates of the whole, but as affecting particular portions of these islands in different months; for the monthly isothermal lines drawn by Mr. Alexander Buchan show very important facts, and I have attempted in this map to give some of their results. The continuous black lines indicate the isothermals of January; the dotted lines those of August. It appears that, in winter, the isothermals, instead of following the lines of latitude, pursue an exactly opposite course, and during the months of December and January are almost vertical; thus the warm places are on the west and south coast in winter, and the cold ones on the east coast. The isotherm of 43 deg. Fahr. runs through the extreme south-west of Ireland, through Devonshire and the Channel Islands: the line of 39 deg. Fahr. passes through the Shetlands, along the islands off the west coast of Scotland to Hastings; and that of 40 deg. Fahr. through the Isle of Man, Llandudno, and Portsmouth.

We see, too, that the British Channel varies greatly in its winter climates, and, as we advance from the Land's End and approach the Straits of Dover, the winter temperature gradually falls.

In the month of January, in the Scilly Islands, it is 46 deg. Fahr.; at Helston in Cornwall it is 45 deg. Fahr.; at Torquay it is 42.4 deg.

Fahr.; at Ventnor it is 41.6 deg. Fahr.; at Worthing, 39.6 deg. Fahr.; at Eastbourne, 39.3 deg. Fahr.

We may thus conclude that, in the winter, the western portion of the British Channel is far warmer than the eastern.

Thermometrical observations have proved that the water of the sea off the coasts of Devonshire and Cornwall is seldom lower than 45 deg. Fahr. in midwinter; and Mr. Whitley once found it as high as 50 deg. Fahr. off the Cornish coast in December, when the westerly winds had been blowing for some days; and in the Scilly Isles, the temperature records tell us that, in twelve years, frost only appeared during four winters, while the mean temperature in December is sometimes as high as 51 deg. Fahr. This is after westerly winds.

As the sun gains power, the isothermal lines tend more and more to follow the direction of the latitude; so that in April they have quite changed their course; and in August, as is seen in the annexed map, they become nearly horizontal, showing, if anything, a tendency towards greater heat on the eastern than on the western shores. This greater heat of the eastern coast in summer is due, as Captain Toynbee pointed out to me, to two reasons; partly to the equalising influence of the Gulf stream being less felt than on the western coasts, and partly to the effect of the adjacent continent, which extends in an unbroken line to the shores of China.

We thus see the extraordinary influence exercised by the Atlantic and its currents over our climate; it raises the winter temperature of the whole of our west coasts, and at the same time moderates their summer heat; this double influence waning as we approach the eastern shores, where the extremes become more prominent, the winters being colder and the summers hotter. In the British Channel, Devonshire and Cornwall are most affected by it, and Sussex least so; and that is the reason of the difference in mean winter temperature between Torquay and Hastings—a difference of 5 deg. Fahr. All these places are contained between latitudes 50 and 51, and are situated on a coast-line varying greatly in outline, deeply indented in Cornwall, Devonshire, and Dorsetshire, and tolerably uniform in Sussex; most of the health-stations have a sheltering background of hills or cliffs to screen them from northerly winds.

The rainfall varies from 23 to 44 inches, according to the proximity to mountains; and the number of rainy days from 132 to 178. The range of temperature varies from 27 to 33. The prevailing winds are westerly.

Having sketched the leading meteorological features of the climate of our British Channel, and noticed the peculiarities distinguishing particular regions, we will now give a concise account of 243 consumptive patients who passed one or more winters under its influence with the object of benefiting their health. These, with few exceptions, were not inhabitants of these places, but hailed from other localities.

As regards sex, 135 were males, and 108 females. In most statistics of phthisis, the males are found to be more numerous than the females, the proportion generally being three males to two females; but, among these, the females are more than ordinarily numerous, showing a ratio of four females to every five males; and it will be well to bear this in mind when we examine their after-career.

TABLE I.

	MALES.		FEMALES.		TOTAL.	
	No.	Percentage.	No.	Percentage.	No.	Percentage.
Under 20 years..	21	15.56	31	28.70	52	21.40
20 to 30	49	36.30	50	46.30	99	40.07
30 to 40	43	31.85	21	19.45	64	22.23
40 to 50	17	12.59	2	1.87	19	7.81
50 to 60	4	2.96	3	2.78	7	2.88
60 and upwards..	1		1		2	
	135		108		243	

As to ages, these have been arranged in Table I. In this, as in all my statistics, I have taken the age, as far as it can be ascertained, at which the patient was attacked with consumption, and not that at the time when the physician was consulted, which is an uncertain and often fortuitous circumstance, and, in chronic cases, would afford no date whatever for calculation. The patients were attacked at ages varying from 7 to 80; in the greater number, between 10 and 40; the larger number of females being attacked between 10 and 30; the larger number of males, on the other hand, between 20 and 40; the average age of attack among the males being 29½, and among the females 25.39. This, again, is according to the law which I have deduced elsewhere, that females are attacked earlier than males.

Family predisposition was present in 118, i.e., in about half of the

cases; and hereditary predisposition—i.e., distinctly traced disease—in one or both parents or grandparents, was present in 29, or about 12 (11.93) per cent. This corresponds again with the average in cases of phthisis in the upper classes.

Origin and Nature of Disease.—It would take up far too much of the Society's time to give a detailed account of the pathological condition of these patients, or of the causes and modes of origin in each case; but it will be sufficient to sketch, in a few bold outlines, the forms of consumptive disease with which we have to deal.

Before doing so, I must state my conviction that it is impossible to arrive at any sharply defined classification of consumption. The principal pathological states met with in the *post mortem* room are due to, firstly, inflammatory processes of different degrees of intensity, and whose products may vary greatly in power of vitality; secondly, infective processes giving rise to irritation of the lymphatic system, and consequent hyperplasia of the adenoid tissue. The question whether a lung contains tubercle or not is simply whether infection of the lymphatics, local or general, has taken place; and this is often very difficult to determine; but we must remember that in by far the greater number of consumptive cases tubercle does form; and it is rare to examine the body of a patient who has died of phthisis without finding tubercle in his lungs, or that increase of the fibroid element which is now regarded as but the past tense of tubercle.

The principal forms of phthisis that I recognise are:

1. Acute tuberculosis.
2. Acute phthisis.
3. Scrofulous phthisis.
4. Phthisis arising from pleurisy, pleuropneumonia, or pneumonia.
5. Catarrhal phthisis.
6. Haemorrhagic phthisis.
7. Laryngeal phthisis.
8. Chronic tubercular phthisis.

A glance at this list will show that the arrangement is not purely pathological, but partly pathological and partly clinical, setting forth the principal features by which different groups of consumptive cases may be distinguished. Between all these groups links can be found; and in many cases, in process of time, a case classed under one heading may develop features which render it more suitable for some other group, as no hard and fast line of demarcation exists between them.

Our climate cases have one factor in their histories which forbids their including either of the first two groups, acute tuberculosis or acute phthisis; viz., that each patient had been at least one year under observation. Acute tuberculosis, as we know, is fatal in a few weeks, and must, therefore, be put out of our category. Acute phthisis, or what many authors call scrofulous pneumonia, is characterised by rapid consolidation and excavation of the lungs, accompanied by high pyrexia, alternating with chills and intense night-sweats, by persistent and distressing cough, and by abundant and opaque expectoration; also by rapid wasting; and, from the acuteness of its symptoms, it much resembles pyæmia, and rarely lasts many months. Though prolongation of life does occasionally occur in this form, no examples of it are embraced in our present list.

Twelve of our patients were instances of *scrofulous* phthisis; and in these the disease was preceded or accompanied by scrofulous affections of one or more joints, by caries of the ribs, sternum, or vertebrae, by psoas or lumbar abscesses, or by induration and cascation of some group of lymphatic glands, whether cervical, axillary, bronchial, or mesenteric; or, lastly, in some by fistula. This class of cases is generally a favourable one, the progress of the disease being slow, owing to the various diverticula which exist, to protect the lungs from some of its virulence.

Fifty-two cases, or about one-fifth of the whole, were traceable to attacks of pneumonia, pleuropneumonia, or pleurisy, in which perfect resolution had not taken place; but a certain amount of consolidation or thickening remained behind, and acted as a source of local irritation, thus in time giving rise to the formation of tubercle.

The principal clinical features were persistence of cough after the inflammatory symptoms had passed away, wasting, shortness of breath, with pain, and some flattening of the affected side; the lung-disease was generally unilateral, and considerable displacement of organs often occurred. Under this heading is classed the curious collection of cases known as fibroid phthisis, which, for a long time after its recognition by a former distinguished president of this Society, was denominated by some "chronic pneumonia", by others "cirrhosis of the lung"; but, in my humble opinion, this group is clearly marked out, by clinical features and pathological products, as a variety of consumption, though, as a rule, its origin is inflammatory.

The patients included, too, forty-eight instances of *catarrhal* phthisis,

being one-fifth of the whole number. By *catarrhal* phthisis, I mean cases where the disease can be distinctly traced to attacks of bronchitis, whooping-cough, or croup, which have given rise to *catarrhal* lobular pneumonia, a form of consolidation difficult of absorption on account of the preponderance of the epithelial element remaining behind unresolved. The patients never quite lose their cough; and after a while begin to waste, and to expectorate opaque matter in large quantities. The lungs are at first resonant, excepting a few scattered patches of dulness; and the auscultation-sounds, in the early stage, are hardly to be distinguished from bronchitis; but, after a while, the observer detects the ominous creaking rhonchus, and finds he soon has to listen to undoubted cavernous gurgles. I know of few cases in which cavities appear to form so quickly.

Four of the patients belonged to that interesting class described by Dr. C. J. B. Williams and myself under the title of *haemorrhagic* phthisis, and by Dr. Peacock as *haemoptysical* phthisis. They are not to be confounded with Niemeyer's "phthisis ab hæmoptoe", where the presence of blood in the smaller bronchi is said to set up caseous pneumonia; but the distinguishing features are the occurrence of very copious hæmoptysis, with very little cough and but slight physical signs; its recurrence from time to time, the patient enjoying tolerable health in the intervals; and the detection, after a while, of consolidation generally in the interscapular, scapular, or suprascapular regions; cough, purulent expectoration, wasting, and other symptoms of phthisis supervening. This is one of the forms which in time sinks into the ordinary chronic consumptive case.

One patient was an instance of *laryngeal* phthisis with ulceration of the larynx, and some tuberculation of the lungs. Among the remainder, in two, the disease came on after enteric fever; in three, after confinement or miscarriages; in one, after injury to the chest-wall; in two, after deformity of the thorax.

No fewer than 126 were examples of the most common form of consumption, chronic tubercular phthisis; and the large preponderance of this ordinary form of the disease is of great importance, as it shows that these patients were not selected rarities or clinical curiosities, but fair instances of the terrible complaint against which we most of us have to contend daily to the best of our ability.

Hæmoptysis was present, in varying degrees, in 131 patients; that is to say, in 53.91 per cent.; and in two cases was fatal. It seems to me that this will be a sufficient outline of the principal features in the histories of these patients to enable us to form some idea of their general state, and more details would only be irksome; so let us now pass to the state of the lungs.

[To be concluded.]

CASE OF TRIPLETS WITH HÆMORRHIAGE.

IN April 1874, one morning about ten, I was called to attend a labour about four miles off. I found the patient to be about 35 years of age, of stout build, multipara, and she had been in labour for four or five hours on my arrival. On examination, I found the os fully dilated, the membranes ruptured, and the feet and breech of a child presenting. The pains appeared strong and regular, but were not very effective; this inefficiency being, no doubt, due to the great bulk of the uterine contents. The first child, after considerable delay, was born, and, on examining again, I found the head of the second at the brim; this came away quickly, so quickly indeed that, owing to the toughness of the membranes, I could not readily evacuate the liquor amnii, and the child was born with the membranes entire. The third child was also soon born, the head presenting, and, as in the case of the second, the membranes were unruptured, and the meconium was diffused through the liquor amnii, the combination forming a liquid of a deep green colour. The last two children were dead, the first survived, and they were all of full size.

The placenta were two in number, the cord of the first child having a separate placenta, which came away first; the other two cords were attached to a single placenta, which was of great size. These came away without any hæmorrhage; but, immediately after, smart hæmorrhage came on, which was only temporarily controlled by the usual remedies: pressure, cold, ergot, and even the introduction of the hand into the uterus, did not stop it. I thought it would have become necessary to inject the liquor ferri solution; but, before doing so, I tried what the injection of plain cold water into the uterus would effect, and found that, after a few injections, the hæmorrhage ceased. The woman, although very weak, made a good recovery.

I believe it is very unusual for the child to be born with the membranes unruptured and the water unevacuated, as was the case in two of these.

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