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BED-SIDE SKETCHES.

ON THE PATHOLOGY, DIAGNOSIS, PREVENTION,
AND TREATMENT

OF

THORACIC CONSUMPTION.

BY

J. C. HALL, M.D.

FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS, EDINBURGH; MEMBER OF THE
ROYAL COLLEGE OF SURGEONS, LONDON;

AUTHOR OF "REMARKS ON THE NATURE AND TREATMENT OF SOME OF THE MORE
IMPORTANT DISEASES, INCLUDING THE PRINCIPAL DISEASES OF THE EYE,"

ETC. ETC.

"Concordiâ res parvæ crescunt."

FROM THE LONDON MEDICAL GAZETTE.

LONDON :

LONGMAN, BROWN, GREEN, AND LONGMANS,

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RED-SIDE SKETCHES.

OF THE PATRIOTIC, DISASTROUS, AND
AFTERMATH

THORACIC AND PULMONARY

J. O. DALL, M.D.

WITH THE HISTORY OF THE DISEASE

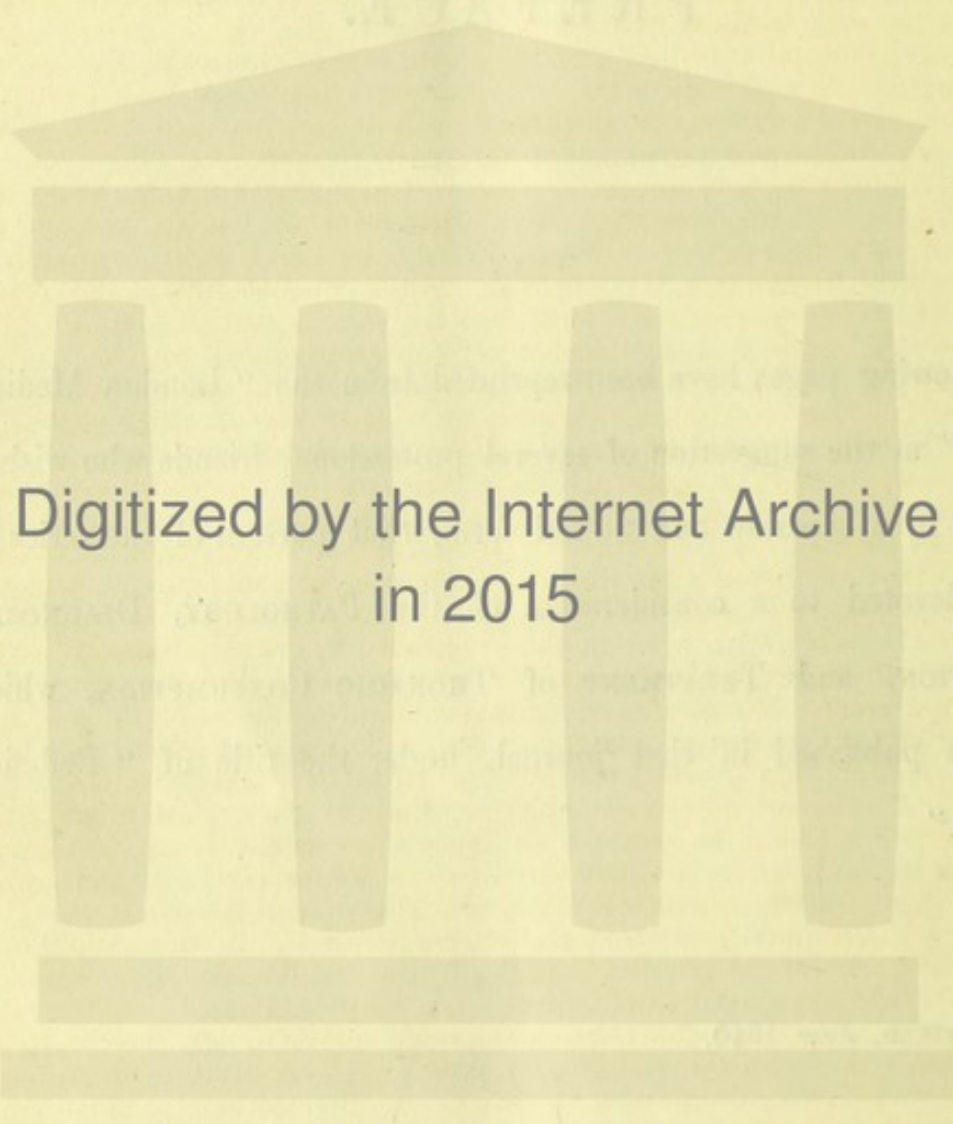
LONDON.

JOHN W. POTT, GREEN AND EXCHANGE

P R E F A C E.

THE following pages have been reprinted from the "London Medical Gazette," at the suggestion of several professional friends who wished to have, in a separate and united form, that portion of the series of papers devoted to a consideration of the PATHOLOGY, DIAGNOSIS, PREVENTION, and TREATMENT of THORACIC CONSUMPTION, which has been published in that journal, under the title of "Bed-side Sketches."

SHEFFIELD, *June* 1850.



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THORACIC CONSUMPTION.

COD-LIVER oil, as a remedy for the cure of consumption, has now been for some time occupying the attention of the medical profession, and it certainly is the duty of every practising surgeon and physician to record the results of its employment in his own practice; thus will be gathered from every part of the kingdom a number of valuable facts, from which, in the end, some correct and very important conclusions may be drawn: from such an accumulation of cases it is obvious the truth can only be obtained; for the experience of any individual, be that experience ever so extensive and prolonged, would be altogether unavailing for such a purpose. To assist, however humbly, in such a work, *Thoracic Consumption* has been selected as the subject for our present inquiry.

Can consumption be cured? can it be arrested? *can it be prevented?* are questions of the most momentous import; for not only do they concern the members of our own profession, individually and collectively, but in their solution the fathers, mothers, sons and daughters, of this country, are most deeply interested; for how few families can for many generations hope to claim exemption from the attacks of this relentless destroyer, which selecting but too often the fairest and the most beautiful of our sisters, or the most promising and intellectual of our sons, quickly carries them to the dark silence of a premature grave. The deaths from consumption in England and Wales amounted during the past year to many thousands. In London alone, in 1849, 6317 died (and during the last five years no less than 33,524) of thoracic consumption.* Does tubercular phthisis (*thoracic consumption*) admit of cure, and if so, does

cod-liver oil prevent the deposit of tubercles, and when tubercles are already deposited what influence does it exert upon them? are the questions to the answering of which attention must be more especially directed.

From the results of the exhibition of the oil in our own practice, and from what has been gleaned from the experience of other physicians, we can have no hesitation in stating that much benefit has arisen from its employment, even in some of the worst cases of phthisis; but we would not trust alone to this medicine: it is only a part of that plan of treatment which requires to be most steadily persevered in, and which, in detailing certain cases, an endeavour will be made to discuss.

But first let thoracic consumption be clearly defined, and also the signs denoting the arrival at those several stages of that long journey of hopes and fears by which it conducts its victims to the tomb; for it would be unfair to claim for any remedy powers which it does not possess, or to swell the list of supposed cures by cod-liver oil, after giving it in imaginary cases of phthisis. It will be well, then, 1st, to define what is meant by the term *thoracic consumption*; 2d, the signs by which the disease is detected at each period of its existence; 3d, the treatment of consumption. This

kind as to supply, and for which we take this opportunity of returning our best thanks.

Deaths in London from	1845	1846	1847	1848	1849	Total deaths in 5 years.
1. Thoracic Consumption . . .	6731	6890	7010	6556	6317	33,324
2. Tabes Mesenterica	594	861	990	856	841	4,142
3. Bronchitis	1686	2431	4343	3030	3243	14,733
4. Pneumonia	3896	3151	4290	3499	3593	18,429
5. Laryngitis	79	121	208	187	192	787

* The polite attention of the Registrar-General has enabled us to compile for our readers the following table from the materials he was so

division will of course embrace also an examination of the measures to be employed for preventing its development, more particularly in children and young persons, in whom an hereditary taint is known to exist.

a. Thoracic consumption.—If we were to regard phthisis as confined to the lungs only, a manifest mistake would be committed: thoracic consumption is only an offspring of a peculiar constitutional disease, the favourite site of which is the lungs; and why? It would be foreign to the purpose for which these papers are written, to enter at length into the causes influencing the deposition of tubercle; the circumstances which deteriorate the materials of nutrition, and thus induce the deposition of cacoplastic and aplastic matter, may be either local or general. Of the local causes, Dr. Williams mentions—"congestion, and the lowest and more chronic forms of inflammation," as capable of producing cacoplastic deposits, but even in such cases he is of opinion that general causes have also no inconsiderable share in such formations; "that is, a degraded state of the plasma of the blood."

It has been stated by Dr. Campbell that the lungs are more liable than any other organ to tuberculous deposits, from the very minute size of their capillary vessels, which form a filter to the blood, and thus arrest the further progress of the tubercular matter: if this be so, why does the deposit not take place abundantly in muscular fibre? The tubercular deposits have been proved, microscopically, by Messrs. Addison and Gulliver, to be extravascular, sometimes on the surface of the air-cells, and in other cases in or under the membrane of which they are composed.

In this peculiarity of constitution on which the existence of thoracic consumption depends, there is found in the blood an increased liability to deposit: there is, it has been proved, in the blood of individuals who have the misfortune to labour under the tuberculous cachexia, an altered state of the red particles, and a great excess of fibrine: now, from fibrine in a healthy state is developed the basis, or plasma, whence the reparative process is derived: this plasma, in a healthy individual, has a capacity for life, and is capable of organization; but when the scrofulous diathesis exists, this capacity is *lowered*, and the material for nutrition becomes what Dr.

Williams has happily termed "cacoplastic;" capable only of a very low degree of organization, or perhaps not organizable at all, as is seen in yellow tubercle, pus, and cheesy matters. Fibrine always is found in superabundant quantities in the blood of consumptive patients, but the products are either "aplastic" or "cacoplastic." A recent writer, Mr. Gulliver, states that the fibrine of the blood in these cases exhibits, under the microscope, fewer finely defined fibres and regular nuclei than is natural, more closely resembling coagulated albumen than the more animalized form of protein: the red particles are deficient in quantity, and the fibrine is also more opaque, and less elastic, than in that which is derived from the healthy blood presenting numerous fat globules, and a predominance of granular matter.

In childhood and youth, the lymphatic glands are very prone to strumous inflammation, especially the mesenteric and cervical glands. In more advanced life tubercles exist more frequently in the organs of respiration, and they are deposited more commonly and thickly upon the posterior and superior portion of the upper lobe: here tubercles, if existing at all in the lungs, are nearly certain to be found: indeed, that distinguished pathologist, Dr. Carswell, does not scruple to affirm that when they are found in any other portion of the lung they are of secondary occurrence: to this rule one exception requires only to be made—viz. an attack of inflammation in some other portion of the lung which may have occasioned the first deposition of tubercles in that part. That tubercles should be deposited in the lungs more than in any other organ, is not to be wondered at, when it is remembered that they are highly vascular, and that a very large quantity of blood is constantly passing through them, so that it seems hardly possible for them to escape a participation in any disordered condition of that fluid. The softness and yielding nature of the pulmonary textures renders them more readily adapted for the permission of effusion than such structures as are more dense in texture; the exposure of the lungs to external causes of disease, such as cold damp-air, entering directly by the windpipe, or operating through the medium of the circulation; and, lastly, from their being the principal seat for

the production of fibrine,—fibrine being found in much larger quantities in arterial than in venous blood,—all these circumstances undoubtedly render the lungs the most frequent seat of tubercle.

Not only are tubercles deposited with singular uniformity in the upper and back portions of the upper lobes, but the left lung is more frequently attacked than the right. Thus it was shown by Louis, that in 38 cases in which phthisis had proceeded to the complete disorganization of the upper lobe of the lung, 28 were of the left, and 10 of the right. In eight cases in which the pleura was perforated by the extension of tubercular disease, 7 were on the left side. In seven cases in which only one lung was affected, in four of these cases it was the left. In 100 cases of thoracic consumption which came under the care of Dr. Cotton during the first dawning of the disease, he found the seat of tubercle to be the apex of the left lung in 51 cases, of the right in 27; in 8 patients the deposition appeared alike in both apices, and in 14 the deposition was unequal. It would appear that the opportunities for investigating this disease which the hospital for consumption at Brompton has afforded go to confirm the conclusion to which Dr. Carswell had long ago arrived, for in 500 out-patients only 4 presented signs denoting the lower lobes to be the principal seat of tubercle. Thoracic consumption, therefore, presents a very striking contrast to pneumonia, for in 210 cases which came under the observation of Andral, it was twice as common on the right side as the left. The following table gives the seat of 868 cases of pneumonia, treated by M. Lombard, of Geneva.

No. of cases.	Right lung alone.	Left lung alone.	Both lungs at once.
868	413	260	195

There is yet another difference between phthisis and pneumonia. We have seen that in the former the upper lobes of the lungs are for the most part affected; in the latter, in the great majority of cases, the lower lobes will be attacked. Now and then inflammation may commence in the superior lobes; but, when we find the upper portions of the lungs involved, it is generally in

cases where the disease has ascended from below. There may be exceptions, but this is the rule.

We have now described the deposition of tubercles, as we have seen them in considerably more than one hundred bodies which we have had an opportunity of examining in this country and in the schools on the continent; and we would add that they are situate on the mucous surface of the vesicles, and in the small bronchial tubes which lead to them. Masses of these diseased air-cells in some bodies may be observed to have run together into one huge mass. In most cases these tubercles will be seen varying in size, in the same lung, from a small shot even to a large egg. Sometimes the tubercular matter is regularly diffused over a considerable extent, filling up the whole of the vesicular and interstitial portions of the lung, without limit or circumscribing boundary. The lung then appears as though it had been minutely injected with some fluid which had become dry and hardened in process of time; and we have an exhibition of the *tubercular infiltration* of French authors. In our opinion (and we are supported by that truly practical physician, Dr. Watson) there is no evidence to show that inflammation is necessary to the formation of tubercle; but, to quote his words, "an undoubted and most important *connection* exists between the occurrence of inflammation and the occurrence of tubercles. *Tubercles will cause inflammation, and inflammation will determine the development of tubercles*" (p. 200, vol. i.).

Once deposited, the tubercles may remain even for years in the same condition, encircled by perfectly sound lung; they remain in what is technically termed a crude state. Much will depend upon the extent of lung involved in the disease—much on the nature of the deposit itself. In some constitutions, where the strumous diathesis exists to a great degree, and where the blood is, as it were, surcharged with an enormous quantity of aplastic material, the tubercles are from the first of a yellow colour, soft and friable, and quickly break down into a moist cheesy substance. In other cases, where the nutritive powers are not so lowered, the tubercles are at first of a grey colour, and some few fibres and cells may be traced in them; but this state is not

often long permitted to exist: an attack of inflammation comes on, from some cause or other; they lose the little brightness they at first possessed, and become changed into that form of tubercle which Laennec first introduced to our notice.

This change first takes place in the centre, which arises, as Dr. Williams supposes, from the fact that, being devoid of blood-vessels, the centre is further removed from the vivifying influence of the blood. It was suggested by Dr. Elliotson, that the softening of tubercles is the result of a spontaneous chemical change, and the author already quoted agrees with him so far; but he also regards this chemical change to be promoted by the fluids of the surrounding parts. So long as tubercles remain dry, this change does not take place; but, on an afflux of fluids around them, they soon become soft. Mr. Gulliver has drawn attention to the very singular increase of fat globules in softened tubercle.* Although, as already stated, the tubercles may remain even for years in a state of rest, sooner or later, in the great majority of cases, inflammation is set up around them. This inflammation is of the strumous type; thin pus is thrown out around the deposits, which become loosened, and at length the whole is expectorated. This is the way in which tubercles are got rid of; and, singular as the remark may appear, it is nevertheless true, that it is by this process of nature to get rid of the extraneous matter the unfortunate patient is destroyed. There is nothing malignant in the nature of tubercle; and, if the quantity deposited in the first instance be small, even when this process takes place the patient may recover, provided no additional crop of tubercles be sown. This, unhappily, generally takes place: the constitutional taint remains; and no sooner has the poor patient got rid of one lot of tubercles than the process is repeated, and at length, worn out and exhausted, he dies.

Some years ago we saw a gentleman in whose lung a vomica most undoubtedly existed; but it had, happily for

himself and for his family, existed singly: it was in time completely emptied. It gradually contracted, and is now completely obliterated. We have examined one or two bodies in which this state of things was very beautifully demonstrated. When the sides of these cavities come together, a puckering takes place of the pleura on the surface of the lung; beneath this puckering will be found a collapsed vomica, the inner surface of which resembles cartilage; but, unfortunately, the result, at least hitherto, has been that the tubercular bodies continue to increase, inflammation is set up, the tubercles, becoming further degenerated, soften and are expelled, leaving larger or smaller caverns. We have seen them not bigger than the end of the finger, and sufficiently capacious to contain at least a pint of fluid. Sometimes the whole of the upper part of the lung is excavated into a large cavern. We have the notes of the post-mortem examination of two bodies which we opened, the one on the 15th, and the other on the 16th of June, 1836, in the presence of Mr. R. J. Pollock, of Kensington. In both were very large cavities, more particularly in Mr. Kinner, æt 40, a carpenter. There was a cavity in both lungs, but more especially in the right, which was almost destroyed. This large vomica appeared the result of the amalgamation of several smaller ones. It was irregular in shape, and divided into compartments by bands, which crossed it in various directions. There were also, in both these cases, a good many pervious bronchial tubes opening into the cavities, and appearing as though they had been divided just before entering the excavations. No blood-vessels were found in these cavities, nor have we seen them in the great majority of the numerous subjects dying from phthisis that we have had an opportunity of examining. This would appear to arise from the yielding nature of the coats of the vessels permitting their being pushed out of the way and flattened. Some are thus rendered impervious by pressure from without, and others are probably obliterated by accumulations in their interior. Sometimes a considerable blood-vessel does get laid open in the formation of a vomica. This happened to a young lady under our care, who was seen by Mr Chapman also, and whose death

* Mr. Davy discovered *oleine* and *margarine* in opaque exudation corpuscles from the lungs. Dr. Williams has so many times detected fat globules in deposits in the kidneys, and in the vegetations on the valves of the heart, that abundant proof is before us of the liability, in all degraded plasmata, to the production of fat.

was the result of hæmorrhage. We saw a young man, in consultation with Mr. Harrison, of this town, about a month ago, in consequence of an attack during the night of rather copious exhalation of blood, which tinged the matters expectorated, and which evidently came from a large cavity in the upper portion of the left lung. The case is different with the bronchial tubes, which do not admit of easy compression; and, in the blending together of the softened tubercular bodies, by which these cavities are created, the air-tubes included within this pulpy mass become stopped up by it; and, when the whole breaks down by the process of serofulous suppuration already pointed out, they are coughed up with the rest. Their open mouths remain at the point where the tubercular matter stopped; and, when this also becomes soft, channels are formed through which it may get into the trachea.

There is yet another way in which (when limited in extent, and when the additional deposition of tubercles can be prevented) consumption may be cured—(we have already alluded to the contraction and ultimate obliteration of very small vomicae)—which is this: either the more fluid portions of the tubercles may be absorbed, or the earthy salts they contain may concrete. The whole is then converted into a contracted, hard, putty-like mass. This is sometimes coughed up, or in some cases remains for years in the lungs without doing any great harm. This circumstance has been dwelt upon at great length by Dr. James Turnbull, of Liverpool, in a very able paper published in the last number of the *London Journal of Medicine*. This putty-like matter is composed principally of phosphate of lime. The conversion of the yellow and softened tubercle into calcareous matter would appear the result of the absorption of the animal matter, and the deposition of an earthy salt in its place. Thus proof is afforded of the occasional absorption of tuberculous matter, and additional evidence is furnished by those cases in which it is observed to have accumulated in the bronchial and mesenteric glands; and, when in the lungs, cicatrices, with a little cretaceous matter in them, are the only traces that remain.* We heard of a case only a

short time ago in which one of these chalky bodies was coughed up, the patient remaining quite well to this day. It may be well to refer the over-sanguine (and we all, as we get older, find cases far more difficult to cure than, in the happy inexperience of youth, we once thought them) to the remark of that truly scientific, cautious, and experienced physician, Dr. Watson, who

sumption, Laennec remarks (Forbes' Translation, 2d edition, p. 358):—"From considering the great number of the phthisical and other subjects in whom cicatrices are found in the summit of the lungs, I think it more than probable that hardly any person is carried off by a first attack of phthisis. In the Archives Générales de Médecine, 1839, is a paper from the pen of M. Rogée, on the curability of phthisis, in which the details are given of several cases which prove that the calcareous bodies which are found in the lungs are the result of the transformation of tubercle. Dr. Turnbull had last year a patient in the Liverpool Infirmary who died of tubercular peritonitis. The abdomen contained "a very large quantity of matter like mortar, and the mesenteric glands exhibited almost every form of tubercular disease, some being in the state of crude, cheesy tubercle, and others undergoing transformation. In this case the liver was found to be "fatty,"—a fact tending, the author of the paper thinks, to show that fatty degeneration of the liver, so often seen in persons who have died of thoracic consumption, cannot be a result of the function of respiration being interfered with; but that it has some peculiar relation to tubercular disease generally, and is more frequently found in pulmonary consumption, because, as we have already seen, the lungs are the organs in which tubercles most generally, and in the greatest abundance, exist. In a paper in the *Edinburgh Medical and Surgical Journal* for April 1845, Dr. Bennett considers the existence of cicatrices which denote the spontaneous obliteration of a vomica as far from uncommon. Andral gives the histories of eight such cases, and Louis relates two or three. In one of the chapters of his interesting work headed "Examen de cette question: la guérison de la phthisie est-elle possible?" Laennec fully enters into the subject of the cure of consumption, not only by the cretaceous transformation of tubercular matter, but also by the cicatrization of cavities. Eight or ten cases are related, and in three this celebrated stethoscopist was fully satisfied that he had traced the healing of cavities, and recoveries took place after all the worst symptoms had supervened. We must, therefore, admit that occasionally, under certain circumstances, consumption undergoes a spontaneous cure: this is a fact as well established as any in the whole range of medical science; but we cannot help adding, in the words of our worthy friend Dr. Wood, the secretary of the College of Physicians of Edinburgh, that "this takes place by the efforts of nature;" at any rate much more frequently than as the result of the nostrums which those who are so anxious to come before the public as "consumption curers," vaunt as specifics. The very fact of the number of cases in which post-mortem examinations display cicatrized cavities in individuals where consumption was never for a moment apprehended during life, and for which neither naphtha, cod-liver oil, or any other specific was exhibited, should at least teach us to pause before we say, in other cases, that cicatrization has been the result of treatment.

* With regard to the cure of pulmonary con-

writes, in his 56th Lecture—"Let me tell you, while I think of it, that the expectoration of these chalk-like concretions, denoting, as it does usually, the existence of pulmonary consumption, *marks at the same time the chronic character of the case.* I am acquainted with a gentleman who, though delicate, enjoys a fair share of health, and who has for years been coughing up at intervals little branching fragments, like bits of white coral, consisting principally of carbonate and phosphate of lime, and evidently moulded in the smaller bronchial tubes." There is a wonderful difference between these chronic cases and such as are acute: in the former, death may quickly arrive, either from the state of the constitution being so highly tuberculous as only to require some trifling cause to induce a deposition to a considerable extent in both lungs at the same time. All the symptoms are unusually severe: the cough increases day by day; the expectoration becomes more and more copious, and quickly goes through its various changes; the hectic fever is violent; the morning perspirations are copious: next diarrhoea sets in, and in six weeks or two months the patient dies of what is popularly and very correctly styled "*a galloping consumption.*" In the Archives Générales de Médecine, vol. ii. p. 205, Andral relates four cases of this rapidly fatal form of consumption: three of them occurred in young persons, and terminated in from three to five weeks. It is worthy of note that such cases usually occur in the young; and in such as have the tubercular cachexia strongly developed the disease often commences after scarlatina or measles, &c. Now, if such cases are treated by the careless or inexperienced as wholly inflammatory, and active measures be resorted to, a fatal result will often show the fallacy of the favourable prognosis they may have been deluded into pronouncing. Such mistakes may generally be avoided by a little careful inquiry, and by remembering that these attacks usually occur in the members of families of a strongly denoted strumous constitution. Sometimes tubercles, though unsuspected by the patient's family or by himself, have in other cases existed for some time in the lungs: this tuberculous disease, though *latent*, has been making silent and unmarked

inroads. An attack of catarrh follows an imprudent exposure to cold during the winter months: this produces pulmonary congestion. Perhaps an attack of hæmoptysis gives to the patient the first idea of his danger; and now the case soon runs a rapid course, owing to the previously advanced state of the tubercles.

Chronic thoracic consumption, to which the remark above quoted has directed our attention, generally exists at a more advanced period of life—after the 40th year; the acute form occurring most frequently in the young. This chronic form of phthisis, first described by Bayle and Laennec, may exist during the greater part of a man's life: its early stages are little marked; it often occurs in merchants' clerks and others leading a sedentary life; and as such are often the subjects of dyspepsia, although they may have slight cough, and be languid, and little capable of exertion, the stomach is generally thought to be the offending organ, and this, in the opinion of the patients and their family, becomes quite clear when they see the cough leaving them in the summer, and that a few weeks in the country quite renovates them,—that they return with good looks and a good appetite, having gained many pounds in weight. But with the winter the cough returns: they become thin and languid, incapable of much exertion, and, though attending to business as usual, that which was once a pleasure now becomes irksome and fatiguing. The state of health varies a good deal: they are liable to acute catarrh, pleurisy, or pneumonia; take cold after the slightest exposure, and, when an attack of acute catarrh comes on, it is often severe, and is sometimes attended by fever and copious expectoration—symptoms which often seem to threaten life: they recover, appearing to have a sort of chronic catarrh; the appetite is good, but what they eat appears imperfectly assimilated; they are short-breathed, and cannot endure much either of mental or bodily exertion. If a patient labouring under this form of chronic phthisis be in the upper or middle walks of life, and not obliged to expose himself to the vicissitudes of temperature to which our fickle climate is obnoxious, he may live for years, delicate it is true; but the cough is little re-

garded—it almost goes away in the summer, and the dyspnœa has come on so slowly as hardly to be noticed. We have often been told by such patients that they have always “been short of breath since boyhood, and that they remember they could never run and jump and play at cricket like other lads.” This form of thoracic consumption appears of long growth, to be most generally present in the higher ranks of life, and in those in whom there is no very marked hereditary predisposition. It may occur in the merchant’s office, and in those engaged in unhealthy occupations; but the evil day is put off, by perhaps living out of town, which secures a walk and fresh air night and morning, or by a few weeks spent in the country, free from the cares and anxieties of business. An examination of the chest seldom leaves any doubt as to the nature of this affection: one or both the clavicular regions will yield a dull sound on percussion, and, on taking a deep inspiration, the upper part of the chest is seen to move much less than in a healthy individual. On applying the stethoscope, the *expiratory murmur* will be *considerably prolonged*, the voice will be more resonant than is natural, and the sounds of the heart will be very distinct over the dull patches; condensation having taken place in the lungs, from the deposition of tubercles, they have become better conductors of sound. Sometimes, says Sir James Clark, in these chronic cases the “tuberculous matter becomes softened and expectorated, leaving cavities at the summit of the lungs, some of which, having discharged their contents, are either in the process of cure or actually cicatrized.”

That such a patient may exist for years if his habits of life be regular and temperate, and if he avoid exposure to the night air and to other causes having a tendency to produce inflammation of the lungs, we have the authority of the same distinguished physician for asserting; but then such a one is ever in the greatest danger—the grave is daily open before him, and a slight cold, an attack of bronchitis, or any febrile affection, which would have been of trifling moment in a healthy individual, cuts the slender thread of existence, and death, preceded by all the ordinary well-marked types of consumption, quickly occurs. In some of the cures that have re-

cently been reported as taking place in consequence of the administration of cod-liver oil, some of the patients are stated to have reached the age of 35, 36, and 40. Of the cases of cure reported by Louis, one was aged 45, and the other 50. This chronic form of the disease is very common also amongst bricklayers’ labourers and the poor Irish generally in the metropolis: exposed to every inclemency of the weather, scantily clothed and badly fed, one attack of catarrh, bronchitis, pleurisy, or inflammation of the lungs, is quickly succeeded by another, until, at length, the whole of the lungs, having the pleura more or less adherent over their whole extent, present a mass of disease partly tubercular, and partly the result of inflammation. This chronic type of thoracic consumption is well deserving the attention of the profession: in its early stages it may be arrested, and this can only be accomplished by such improvement of the general state of the health as shall remove or considerably mitigate the glandular diathesis. Diseased conditions of the digestive organs were mentioned as often present at the commencement of this chronic form of phthisis: and this irritation of the digestive functions, the result of a congested condition of the liver and abdominal vessels generally, demands the most serious attention of the physician. The statistics of *thoracic consumption*, as an indication of the advantages of any particular line of treatment, require to be received with very great caution: we have within the last few years seen so many vaunted remedies which have gone up like rockets fall to the ground as sticks, that we feel bound to receive the results of the treatment of consumption by any particular remedy with the greatest possible caution; and although we have evidence that the exhibition of cod-liver oil has been followed by marked advantage, not only in the wide field for inquiry which the Hospital for Consumption at Brompton affords, but also in the comparatively limited sphere which our own private practice presents, we have yet to learn that cod-liver oil is a *specific in the cure of thoracic consumption*, any more than naphtha, and a thousand other remedies which have one day been spun to the most exalted position by the whirligig of fortune, the next, “as fickle fancy changes,” to follow their prede-

cessors in their fall: still we readily admit we have seen more advantages arise from the oil than from any other remedy with which we are acquainted. The following table, extracted from the report to which allusion has already

been made, shows the ages in decimal periods of 2679 males, 1679 females, labouring under pulmonary consumption, and the per centages of the sexes at each period of life:—

Ages.	Males.	Per cent.	Females.	Per cent.	Total.	Per cent.
0 to 5	9	0·33	12	0·71	21	0·48
5 to 15	125	4·66	112	6·67	237	5·41
15 to 25	695	25·94	574	34·19	1269	29·11
25 to 35	953	35·50	578	34·42	1531	35·13
35 to 45	570	21·27	271	16·14	841	19·29
45 to 55	251	9·37	110	6·55	361	8·28
55 to 65	68	2·53	21	1·25	80	2·04
65 to 75	8	0·29	1	·05	9	0·20
Total males . . .	2679	Total females	1679		4358	

Below the age of puberty tubercles appear to exist (see the tables prepared by Papavoine*) most frequently during the third, fourth, fifth, and sixth years. M. Andral states,† “tubercles are most prevalent from four to five; they appear in much greater quantities, and in a greater number of organs at once.” After the age of puberty, the greatest number of deaths occur between the age of twenty and thirty; the next in proportion between thirty and forty; the next between forty and fifty; the succeeding grade of mortality sometimes is found between fifteen and twenty, sometimes between fifty and sixty. All writers agree in stating that one half of the deaths from thoracic consumption occur between the twentieth and fortieth years, and that its maximum is reached at thirty; from this age the rate of mortality sensibly diminishes.

In considering some of the leading points of interest in connection with the pathology of tubercular consumption, all reference has been excluded to the diseases which attack the workmen of particular trades; those who are obliged to remain in workshops exposed for many hours to an atmosphere loaded with pulverulent bodies, or charged with gaseous substances of an irritating quality. Dr. Alison states‡ that there is hardly an instance of a mason regularly employed in hewing stones in Edinburgh, living free from phthisical

symptoms to the age of fifty. The inhalation of metallic particles is equally injurious to the respiratory organs; and as the history of the grinders of Sheffield affords one of the most lamentable instances of the fatal consequences resulting from the inhalation of mechanical irritants, we hope the day is not far distant when this useful class of our fellow-townsmen will be taught the advantages to health, to comfort, and to happiness, which must arise from working only in rooms where means are provided to prevent the inhalation of particles so destructive of life. We propose not, however, to discuss this disease in the present paper: enough has been written in the above outline of the pathology of tubercle, we would hope, to convince our younger medical friends (and we are quite certain the great majority of the senior members of the profession will join in the opinion we are about to express, and the truth of which we hope to prove ere this article is concluded) that we must look rather for arresting the fatal inroads of consumption on the population of this country, to the prevention of the development of the disease in youth, than to the exhibition of cod-liver oil, or any supposed specific, when the tuberculous cachexia is fully confirmed. The absolute necessity of attending to the earliest symptoms of this peculiar taint cannot too generally be presented to the mind of the patient, for most fully are we satisfied that to no disease is the old aphorism, “*prevention is better than cure*,” more peculiarly appropriate than *thoracic consumption*.

* These tables are calculated on the examination of an immense number of bodies.

† Andral's Anat. Path., Townsend and West's translation.

‡ Med. Chir. Trans. Edin. vol. i.

β Symptoms of Thoracic Consumption.

Each stage of this distressing complaint is marked by certain well-known symptoms; these symptoms are both general and physical, and in giving an epitomized and rapid sketch of the course of *thoracic consumption*, an endeavour will be made, as much as possible, to trace the connexion between the external symptoms, local and general, and the changes which are at the same time going on in the lungs. In speaking of the pathology of phthisis, reference has been made to some peculiarities occasionally presenting themselves in the symptoms indicative of its presence: it is now proposed to consider the more common form of thoracic consumption, as we see it every day presented to our notice.

a. Period the first.—The patient complains of shortness of breath, particularly when walking up a hill or running up stairs, and a sense of tightness is felt across the chest. Fleeting pains are also experienced, and on arising from bed in the morning the patient coughs once or twice; in a few weeks he coughs also on going to rest, and next he does so two or three times during the day; there is seldom any expectoration, and if present, it is too slight to occasion any alarm either to the patient or his friends, and the cough is so slight that no attention is paid to it. By degrees this cough increases, especially in a morning; there is a tickling sensation in the posterior fauces, from which the expectoration appears to come; this expectoration is now more abundant, it consists of a transparent ropy fluid resembling the saliva; throughout the disease it is always more abundant in the morning, but gradually the cough is accompanied by the same kind of expectoration during the day. The pulse is now accelerated, particularly after dinner, and in an evening,—a desire to creep to the fire is experienced, and an unpleasant chill, followed by some degree of febrile heat, is felt: the sleep is no longer sound and refreshing, and is often interrupted by cough.

On looking at the patient, his face presents a true index of his condition: to the experienced physician consumption is no

“Silent cheater of the eye;”

for the aspect of the countenance ex-

hibits the tuberculous cachexia; the face is pallid; the colour comes and goes; after fatigue it is singularly expressive of languor; the skin is often dry, the elastic feel natural to health vanishes; the muscles are no longer firm; a degree of emaciation becomes evident, and the shoulders appear more forward than natural.

Sometimes, on an amendment of the general state of the health, depending on change of air, increased warmth of the weather (for the duration of phthisis depends much upon the period of the year at which the invasion takes place), or other causes, all these symptoms diminish in severity: this is often the case in the spring, and in the summer they nearly disappear, and the patient and his family become convinced that there is no cause for further apprehension. Delusive dream! fallacious hopes! With the cold weather comes a fresh attack of catarrh, and then all the symptoms, already described, return with much increased severity.

Languor, debility, dyspnoea, slight hectic fever, night sweats, cough, emaciation, more or less, may be said to constitute the *general signs* of the first period of thoracic consumption. What are the *physical signs* at this stage of the disease? and we must keep in mind, that if death should take place at this time, the lung will be found to contain a greater or less quantity of tubercles, the greater portion of which will be of a greyish colour, and to a trifling degree transparent; others will be of a pale yellow colour, and opaque. The bronchial membrane and pulmonary tissue will probably be found little changed in appearance, or at most presenting the signs of increased vascularity. On examining the chest, the supra, or infra-clavicular depression, will often be very apparent; any depression on one side of the chest only is always a symptom exciting the deepest anxiety, and the examination which follows too often confirms the fears which the first glance of the eye has communicated to the mind.

On firmly placing the fingers under the clavicle, and very gently tapping with the middle fingers of the right hand, *percussion* will generally detect a want of resonance in the affected part, particularly if the patient be requested at the same time to take a deep inspiration, and to hold his breath; the unsound lung being less distended with

air than the other, as a matter of course, will exhibit more or less (comparative) dulness. This want of resonance is one of the earliest types of consumption; the only way in which a mistake could be made would be in a case, such as that which occurred (we think) to one of the physicians at the hospital at Brompton, where, in a patient labouring under subacute bronchitis, the infra-clavicular region emitted a dull sound on percussion, evidently from an accumulation of mucus. In sounding the chest, the movement should be made from the wrist, and not from the elbow; and we may here perhaps be permitted to repeat the advice given to ourselves, by that great and good physician whose pupil it was our good fortune to be for many years, the late Dr. Hope—"never in the first instance examine a diseased subject: first learn the sounds natural to a healthy chest." If students would condescend to take this advice, how greatly would their task be lightened, and how much better stethoscopists would they become.

The stethoscope, however, supplies the most accurate knowledge of the actual condition of the lungs; the changes produced in respiration will vary in almost every patient, depending as they do upon the extent and position of the tuberculous deposit, and the condition of the surrounding lung.

One of the most frequent signs is a *prolongation of the expiratory murmur*; the murmur of expiration is actually prolonged, but sometimes inspiration being shortened the expiratory murmur, by comparison, appears longer than it actually is; but whether the expiration be really or only relatively prolonged, it is a most characteristic sign of the existence of tubercles, and one that has not been dwelt upon so much as its importance merits. It arises either from the deposition of the tuberculous bodies causing a mechanical obstruction to the free passage of the air from the lungs, or from a want of contractility in the pulmonary tissue, the capacity for in-

spiration being at the same time diminished by the imperfect expansion and decreased capacity of the lung. Prolongation of the expiratory murmur, and weak, jerking, bronchial respiration, will be the leading evidences afforded on the application of the stethoscope over the part of the lung suspected to be the seat of tubercle.

When, on applying the stethoscope to the apex of the lung, the respiration is found to be remarkably feeble, we invariably place the instrument an inch or so lower down the chest; by degrees the sound becomes louder, and as we approach the centre, or a little below the centre of the lung, the sound has become of the natural intensity; it is true this weak sound may be, and often is, a healthy peculiarity, but then it is the same on both sides, and in all parts of the lungs; we therefore venture to repeat that an evident difference in the force of the respiratory murmur in several parts of the chest, is presumptive evidence of the existence of tubercle, more especially if the sound is weak at the apex and increases in degree as we listen in descending towards the middle of the lung.

Any variation from the natural sounds peculiar to expiration and inspiration always demands our anxious consideration, and *weak, puffing, rough, bronchial, respiration* are all symptoms of tubercles. These signs of phthisis require no illustration in this place: they are all produced by the hindrance which exists to the proper expansion of the lung. The jerking respiration is a very common and a very early type of thoracic consumption: there is at this moment in the Hospital of the Sheffield Workhouse a patient in whom the inspiration, although but little altered in intensity, has for some months past occurred in irregular puffs; the sound is now becoming more harsh. In its earlier period of invasion thoracic consumption is apt to be confounded with chronic bronchitis. The leading points of distinction may be thus contrasted:—

Thoracic Consumption.

Pain most commonly at the sides, and between the shoulders.

Cough often dry at first, and without expectoration.

Morbid sounds.—Upper lobes of the lungs. Hæmoptysis.

Bronchitis.

Pain most commonly beneath the sternum.

Cough attended with expectoration from the first.

Morbid sounds.—Lower lobes of the lungs. No hæmoptysis in simple bronchitis.

If, then, percussion yields a dull sound at the apex of one lung,—if there be an increase of the expiratory murmur,—if the breathing be feeble or rough,—if these signs be attended with undue resonance of the voice, a click, a catch, or any kind of unnatural noise when the patient respires, coughs, or talks,—if these sounds are always present, and if heard in the upper part of one lung only, we may fairly attribute them to the presence of tubercles.

Hæmoptysis is another symptom always to be witnessed with much dread, for should it occur in a person who has not received any injury to the chest, without disease of the heart, or a disordered state of the uterine functions, in the great majority of cases tubercles will be found in the lungs: although hæmorrhage most undoubtedly might, by diminishing the vital powers, render an individual in a condition favourable for the development of tubercles, still we are bound to consider pulmonary hæmorrhage the *result*, and not the *cause* of the presence of tuberculous matter in the lungs. Cases of amenorrhœa and accidents to the thorax being excluded, Louis did not meet with one case out of 1200 of hæmoptysis, except in such as were labouring under thoracic consumption. The report of the Hospital at Brompton shows how frequently it exists, more particularly in the first period of the disease, and that to an extent which very clearly proves its value as a highly characteristic symptom of this stage of phthisis.

Loss of voice is ever an alarming symptom. The mucous membrane of the larynx ulcerates, and this scrofulous ulceration only takes place when the lungs are filled with tubercles. We have before our eyes the case of a gentleman in whom this was well-marked, although the disease in the lungs did not appear to have advanced beyond the first stage. In 180 persons seen by Louis, after death from various chronic diseases, he only examined one with ulceration of the larynx; but in those who had been carried off by thoracic consumption, *one in five* had ulceration of either the larynx or epiglottis, and nearly one in three had ulceration of the windpipe. If, then, the secondary effects of syphilis be excepted, ulceration of the larynx is almost peculiar to thoracic consumption.

Louis remarked that ulceration of

the epiglottis was often latent, and afforded no appreciable token of its existence. The symptoms we have noticed are, a pricking and burning sensation at the superior portion of the thyroid cartilage, with rejection of liquids through the nose: the tonsils and pharynx present no visible alteration. Slight pain, and some peculiarity in the voice, attend the first invasion of the larynx; permanent loss of voice, and deeper pain, denote the more advanced mischief to the interior of the larynx. We are not aware of any sign which proves the trachea to be ulcerated.

In the very early stages there is sometimes present a sound which is most audible posteriorly in the supra-spinous regions: it is only heard during inspiration, and has been called pulmonary crumpling. It is difficult to describe, but the idea it conveys of the lungs is that of their expansion under difficulty. M. Fournet has likened it to the crumpling of tissue paper.

With regard to bronchophony, when it is present there is either consolidation of a portion of the lung, by which the voice is conveyed to the surface, or a bronchial tube is enlarged. It must be remembered, however, that it is in the vicinity of the clavicles, and in the supra-spinous regions, that its value as a sign of phthisis is to be estimated. The side on which it is heard is also of importance. If it be in excess on the left side it is unquestionably morbid; on the right side it is not so important. Bronchophony is generally present when the first period is passing into the second, and is generally accompanied by bronchial breathing, but this is not always so.

b. Second period.—The first symptom marking an arrival at the second period of this disease is a singular change in the appearance of the expectorated matters. The colourless frothy expectoration observed during the first stage is changed. This expectoration is now seen to contain little yellow bodies of opaque matter. These gradually increase, and in the end appear like so many patches, surrounded by a transparent froth, in which they seem to swim. Streaks of blood frequently appear at this time. The hæmoptysis may vary, amounting in some cases to only a faint streak, while in others we have seen a considerable quantity of pure unmixed blood coughed up.

All the symptoms already enumerated next increase in severity. The cough is frequent, permitting little rest to the patient by day or by night; the feeling of cold chills on an evening is more frequently complained of; the succeeding feverish heats are more constant, and the perspirations more regular and copious; the respiration is hurried, even when the sufferer is at rest; the languor and sense of fatigue is greater day after day, and the loss of flesh more apparent; the slightest exertion, either of mind or of body, causes great distress; the muscles are flabby; the face, pale when he awakes in the morning, is tinted with a crimson flush as the day declines, and frequent pains in the side, called rheumatic, are now often most annoying. The period of softening has arrived, and these pains are often the result of the uniting process which is commencing, for the pleura covering the diseased portion of lung generally becomes adherent to that of the ribs. At this period tubercles are generally deposited in the lower portions of the lung also.

An examination of the chest will easily detect the internal mischief which has produced all this evil. The upper portions are less and less freely raised; often there is more evidence of disease on one side than on the other. The infra-clavicular region on the worst side is flattened. On applying the stethoscope the dry crackling rhonchus already described has become *moist*, *mucous*, or *bubbling*. Subcrepitant râles are heard; rapid decomposition of the tuberculous matter is evidently going on; and there is sufficient proof of having reached the second period of thoracic consumption.

c. Third period.—Violent perspirations; almost daily attacks of diarrhœa; increased emaciation and debility; distressing cough; painful dyspnœa, aggravated by the slightest exertion; œdema of the feet and ankles; the shoulders raised and brought forward; the clavicles prominent, having a deep hollow between them and the upper ribs; the flat instead of the rounded chest of health; the dragging upwards of the thorax if the patient attempt a deep inspiration; the loss of bodily power; the decay of the mental energies,—all, with solemn, and not to be mistaken certainty, tell us that we have arrived at the last period of this fright-

ful disease,—that death is inevitable, and that the grave will soon close over the sufferer. *Sufferer!* Some may consider thoracic consumption a disease that causes little pain. No greater mistake can exist. We feel satisfied few diseases are more trying and distressing.

We shall not dwell at length upon the physical signs present at this period. Percussion over the cavities gives a dull sound, although less than before. This arises partly from the existence of the caverns in the superior portion of the lungs, partly from the wasted condition of the parietes rendering the sound less dull than at the preceding stage.

The respiration is in some parts obscure, in others not to be heard; while, in one part of the chest, it may be very clear: the character of it will then be bronchial, tracheal, or even the cavernous respiration described by Laennec. If the patient be asked to cough, a gurgling is heard (*gargouillement*), and pectoriloquy more or less distinct, and more marked in all probability on one side than on the other, will be heard. Whenever pectoriloquy is heard over a cavity, cavernous respiration may also be detected. Cavernous respiration resulting from a cavity may often be heard when pectoriloquy,—a sign, in our opinion, of very uncertain importance,—cannot be detected. Why? Because either the excavation is too small, too far from the surface of the chest, or not adapted to reverberate the voice. Sometimes, when pectoriloquy may be absent, and gurgling, from a want of access to the bronchi, is not very clear, if the patient be asked to cough, a splashing sound becomes very apparent. We have asked a patient to hold his breath for a moment, and then with each beat of the heart it has become very distinct. The contraction of the heart causes a little agitation in the cavity; and, if the contents be thin, the splashing sound is very easily heard.

It remains to consider the treatment of thoracic consumption.

γ. Treatment of Thoracic Consumption.

This part of our subject, in accordance with the plan proposed at the commencement of this article, must be divided into two parts. We proceed, therefore, to consider, first, the prevention of the development of the tuber-

culous diathesis; and, secondly, the treatment of thoracic consumption.

a. Prevention of the tuberculous diathesis.—"The causes of tuberculous disease," says Sir James Clark, "like those of most diseases, are referable to two distinct heads—the remote, and the exciting; or those which induce the constitutional predisposition, and those which determine the local deposition of tuberculous matter after such predisposition is established. The one class of causes operates by modifying the whole system; the other, by determining, in a system so modified, the particular morbid action of which tuberculous matter is the product."

Taking this axiom for our guide, we proceed to consider what are the causes detrimental to health which are to be avoided, in order to prevent the establishment of the tuberculous cachexia? for daily experience more and more fully proves that the ravages arising from thoracic consumption are to be arrested rather by seeking to remove everything which may tend to promote the constitutional predisposition, than to find in some medicine a fancied "*specific*" for the disease when its fatal seeds are sown. This of necessity opens a wide and very interesting field for inquiry—a field the extent of which will of necessity compel a very brief sketch of each of the topics which may suggest themselves.*

In the etiology of disease there is no fact better established than that a peculiarity of constitution in the parents gives rise to the tuberculous disease in their children, and that in proportion to the degree in which the disease is developed in them. This is frequently seen in the offspring of scrofulous parents; the symptoms being often much more strongly marked in the younger than in the first-born children. When the health of the parents undergoes a change during the increase of their family, it sometimes happens, as a consequence, that the elder children are healthy,† and the younger ones the

victims of thoracic consumption. With regard to the disease being more readily transmitted by the father or the mother; this question is a problem difficult to solve. Professor Nasi, of Bonn, is of opinion that the hereditary predisposition is more commonly derived from the mother. We are inclined to think that the child may possess the constitution either of the father or the mother,—a fact seen in almost every family; and it has certainly been remarked, with much truth, that the more nearly the offspring resembles the conformation of its father or its mother, the more closely will its diseases be those of that parent. When both parents possess in a marked degree the tuberculous constitution, the chances of escape for the children become very much diminished: still, we every now and then observe, even in families where there is a strongly marked predisposition to consumption, a generation escape: this arises, evidently, from the improved physical condition of that generation, and from an avoidance of those causes which are favourable to the propagation of tubercle,—a fact worthy of attention, as calculated to induce a strict compliance with a plan of treatment necessary to maintain the body in a state of health. Sometimes a child is tuberculous at birth; but, so far as our own experience enables us to speak, we have seldom seen an instance of this, except where the mother was labouring under the disease in an advanced stage. Once, however, we saw an infant with this diathesis strongly marked at birth; but the father had died of thoracic consumption when the mother was only four months advanced in pregnancy. These are facts well worthy the attention of parents; and how much of pain, of sorrow, and of unspeakable misery, would every year be avoided in this country by the interdiction of marriages between persons where both are labouring under this peculiar state of the system!

It must be added, that gout, cutaneous diseases, syphilis, when treated with long courses of mercury, spirit drinking, chronic dyspepsia, especially that form to which Dr. Todd has directed attention, under the title of "*strumous dyspepsia*,"—everything which has a tendency to deteriorate the vital powers in the parents—may give rise to the tuberculous constitution

* In speaking of the physical signs of thoracic consumption, allusion was made to a case under the care of "one of the physicians to the Hospital for Consumption at Brompton." The physician who first directed attention to this peculiarity was Dr. R. P. Cotton, whose interesting lectures in the pages of this journal are worthy attentive perusal.

† See Sir James Clark on Consumption, p. 319.

in their children. Dyspepsia is undoubtedly one of the most prolific sources of cachexia in every form,—an aphorism that will not be controverted; for a healthy condition of the digestive organs, and a proper performance of their functions, is essential to the due assimilation of food, and a constant supply of healthy nourishment to the body.

From the very interesting Report of the Physicians to the Hospital at Brompton (p. 18), it will be seen that, in a thousand and ten patients labouring under thoracic consumption, *one* in *four* were born of consumptive parents. The exact proportion is 18·2 per cent. of the males, and 36·3 per cent. of the females. It is, however, the opinion of the gentlemen by whom that report was drawn up, that, if this investigation had been extended to preceding generations, “that is, to grandfather and grandmother, and to collateral relatives—uncles, aunts, brothers, and sisters,—that the influence of predisposition would be shown to be still more considerable.” The same table exhibits, also, the singular fact that daughters are more liable to inherit thoracic consumption from their parents than sons; and this in the proportion of two to one.

If a perfectly healthy infant be kept in a close and badly ventilated room,—if no attention be paid to diet or to cleanliness,—the external lymphatic glands, more especially those of the neck, will be seen to enlarge; the hue of health will be exchanged for a pallor which gradually creeps over the countenance; the muscles become soft, the abdomen enlarged, and in a very few months the tuberculous constitution may be established,—and this, too, in a child whose parents are perfectly healthy, and whose brothers and sisters have never exhibited any symptom of this disease. If what has just been stated be true of a child born without any hereditary predisposition, what must inevitably be the fate of another born of unhealthy parents, or of parents highly infected with the glandular constitution, if exposed to these adverse circumstances? The same remark applies to every period of life; but, until the body has arrived at maturity, tuberculous disease may be more easily induced by causes adverse to its healthy development.

Having taken this general view of

the subject, let us consider more in detail some of the influences tending to feed and assist the progress of a disease which every year carries off so many thousands of our countrymen, and the fatal fruits of which, from the seeds now sown, will be ripened in generations yet unborn.

Impure air.—How few are aware of the condition of the dwellings of the poor in the back courts of London and our large towns! How many roll along in their carriages through the magnificent streets of the metropolis, without knowing that within a few yards of them the air is tainted, and pregnant with the causes which give rise, amongst others, to the disease the ravages of which we are now contemplating! These causes of death, though often unknown to the rich and great, nevertheless exist. Rooms never cleaned—walls never purified with a white-wash brush—floors the nature of which is hid by layers of dirt, the accumulation of months. These abodes are seldom visited by the sunbeams; for although the Almighty commanded, saying, “*Let there be light*,” man has so contrived the dark lanes and narrow courts of the back streets of our larger towns, that the sun and the air can never reach them. These houses are surrounded by heaps of decomposing animal and vegetable remains, are often without drainage, or drained only on the cesspool system; and yet in such places families consisting of at least ten or twelve or more human beings are crammed into one room, in which all the domestic duties must be performed: men, women, and children herd together,—eat, drink, sleep, wash, dress, and undress before each other. It is in such places that all ideas of virtue, decency, and morality, are broken down,—that crime is created, brought forth, nurtured, or concealed: here the babe enters the world without God’s blessing, and the old man leaves it without a hope.

The districts thus unhealthy are well known to those who have paid any attention to the sanitary question;* the effects are known also. It is known, as certainly as the large red cross on the door, and over it the words, “Lord have

* Leaves from the Case-book of a Practising Physician, by J. C. Hall, M.D.; the Lancet, 1849. Letter on the Unhealthiness of Towns, by J. C. Hall, M.D., 1846.

mercy upon us!" in the days of the plague, denoted that house to be visited by the pestilence, that in all densely-populated districts, where the streets are dirty, narrow, and badly drained, the houses ill-constructed, without the means for ventilation, cleanliness, or decency, there will most assuredly be found a squalid, wretched, and strumous population. The system, too, of burying the dead in the midst of the living is one highly detrimental to the health of the inhabitants of large towns. It would be improper here to allude to the cruel indecencies practised on the decaying bodies of departed relatives and friends in city burial-grounds, but we cannot refrain from remarking that the vapours arising from these tolerated nuisances are highly prejudicial to health, and must be ranked amongst the most prolific of those causes which increase the "bills of mortality," and seriously affect the health of towns by poisoning the atmosphere; thus turning that which was intended, by the purification of the circulating fluid, to give additional strength, and health, and vigour to the body, into a poison productive of lingering disease and death. Let us hope the day is not far distant when the cities of the living will cease to be also cities of the decomposing dead: let us hope that every assistance will be given by the bishops, and clergy of all denominations, for the closing of every churchyard and burial-ground in the centre of large towns, in order that the present evils may be avoided. Then will our churches and chapels become truly temples devoted to the praise and the glory of the Creator, and not, as now, "whited sepulchres," and all beneath them full of dead men's bones. In ages long since fled, Moses imposed upon the Jews sanitary laws. Among Grecian sages, Aristotle and Plato advocated the absolute necessity of a sanitary police; whilst the Ediles saw that the streets of Rome were kept clean, and the sewers in a proper condition. In our laws relating to health we are yet in a state of barbarism; and many are the useful lessons we might glean from the system of the ancients.

Some writers have gone so far as to assert that impure air and want of light are the only real causes of scrofula; and, although other causes may tend to promote the mischief, these are the most essential to its establishment. In a

very sensible essay,* M. Baudeloque contends that, even if a child be fed on a sufficient quantity of good and nutritious food, if living in a house so placed that the sun's rays do not reach it, or the fresh air cannot be supplied in sufficient quantities,—“if (says he) the house is small, dark, low, and badly aired, scrofulous disease will inevitably supervene:” and it is very certain in this country, in abodes such as we have just been examining,—in the confined houses of the poorer part of the inhabitants of our larger manufacturing towns, even when a sufficient supply of food is given, such nutriment cannot be properly assimilated in the absence of light and pure air. We may therefore safely conclude that the daily respiration of the tainted air of the ill-ventilated narrow dark streets and alleys of towns of many manufactories, workhouses, and workshops (nor must the too often badly ventilated school-room and sleeping apartments of the pupils be omitted)—have a fearful tendency to excite the latent disease into a more active condition, where there is a strong hereditary predisposition, or even to create such a disposition in the most healthy, if circumstances so prejudicial to health be prolonged.

The same adverse causes which tend to produce *thoracic consumption* in man, occasion the deposit of tubercles in animals. The late Mr. Youatt told us that many of the animals under his care at the gardens of the Zoological Society died from phthisis. In the Archives de Médecine, vol. xxv., M. Reynaud has published a very interesting account of the diseases of the monkeys in the Jardin des Plantes. In fourteen of these creatures tubercles were found in the lungs after death, and in some other cases the lungs appeared altogether converted into tuberculous matter. We have ourselves often induced the disease in rabbits by want of light and bad food, and MM. Andral and Dupuy have even observed it in the foetus of the rabbit and sheep. It is said that, after a certain period of confinement in the cow-houses of that city, all the milch cows in Paris become affected with tubercles. Aristotle discovered tubercles in the pig, the ox, and the ass.*

Unwholesome food.—Food unfitted for

* Mémoire sur les Scrofules, Revue Médicale, 1832, vol. i. p. 10.

* Historia Animalium, lib. viii. cap. 21.

the supply of the wants of the growing body is undoubtedly another very frequent cause of this disease. If the most healthy child at birth be suckled by a woman whose milk is either deficient in quantity, or not sufficiently good to nourish the infant imbibing it, the result will, in all probability, be the establishment of that degraded condition of the blood which gives rise to the formation of tubercle. Not only is the coarse food, almost devoid of nourishment, given to the children of the poor, a cause of scrofula, but the stimulating diet too often seen in the nurseries of the wealthy has a tendency towards the same result; and, although the disease may not at first exhibit exactly the same types, the end will be the same in both. It is absolutely necessary to the growth and health of the body that both the quantity and kind of food should be adapted to the age of the child, and to the requirements of the economy.

The same remarks will apply to *clothing*, to *exercise*, and to *cleanliness*. The clothes should be adapted to the season, and care taken so to cover the body that the circulation may be carried on. The dress of young females is generally far too scanty during the day; and in the evening, how often is the young lady of eighteen, thinly clad, obliged to remain for many hours exposed to all the health-destroying effects of a heated ball-room, and when the excitement is over, relaxed and exhausted, she is taken into the cutting currents and cold frosty atmosphere of a winter's night! Is it not wonderful that any escape these baneful influences? And although we often hear many complaints from which this class of patients suffer set down by their good mammas to the delicate constitution inherent to the sex, we are induced to consider the powers of resistance possessed by the fairer part of the creation perfectly wonderful. Let any man be so clad, so tight-laced, so suffocated, so exposed, and how long would he be enabled to boast of either mental or bodily vigour?

With regard to the skin,—unless the greatest attention be paid to cleanliness, a state of body incompatible with health will result. The skin absorbs oxygen, and throws off carbonic acid gas and water,—a function similar to that performed by the lungs. It should, therefore, ever be kept in mind by the practitioner, that in all patients,—more espe-

cially in those in whom a tendency to thoracic consumption is suspected,—that the healthy condition of the skin must at all times be maintained. Hence the advantage of an occasional warm bath, the daily sponging with cold water, and the use of the flesh-brush, by which means the skin is freed from all matters which obstruct free absorption and exhalation. Of the evils of tight-lacing, the encasing the body in stays, so much has been written, and so well, that no additional remarks are required to point out to the youngest student their inevitable results; and yet this system of tight-lacing, by which the functions of respiration are so much interfered with,—because the action of the muscles thereby is crippled, and the free expansion of the chest rendered impossible,—still forms an idol—a fashionable god to whom tens of thousands bow the knee and perish. It may be endured for a few hours at night, amid the glitter of lamps, the strains of music, the excitement of the dance: but all this time the motions of the ribs are restricted, perfect respiration is impossible, the blood is only partially vitalised, and the functions of nutrition, as a matter of course, imperfectly discharged. But mark even yet another result! the internal sensation of respiration not being gratified, and as each inspiration becomes less full, the wants of the body force, as a compensation, increased frequency: the respiration is hurried, and a tendency to inflammatory action is set up. The heart participates in the mischief, and we have a quickened pulse and palpitation. In the morning comes a feeling of debility: the tightly-laced stays cannot be borne; the muscles of the back, no longer sustained by the accustomed pressure, give way; the spinal column bends: a wonder is expressed why Miss Martha, once so remarkably upright, has now round shoulders, and the wonder is soon exchanged for the most just and fearful anxiety when lateral curvature of the spine becomes so evident that it cannot be mistaken; and then, and not till then, the medical attendant of the family is consulted; but the mischief is done.

In childhood, and during the growth of the body, the exercise should be sufficient fully to bring into play, and thus fully to ensure the vigour of all the muscles. This is promoted by the active sports of boys. But how different the

lot of unhappy girls, who, after spending many hours in school, reading, writing, working (at least nine hours a-day)—are permitted perhaps one hour for taking a walk! This exercise consists in walking arm in arm with solemn mien, or with books in their hands, reading, along the road, and is altogether insufficient for the exercise of the muscles specially engaged; and many others are left altogether inactive. What we have said of dress, as regards the head and chest, applies also to the legs and feet, during these solemn funeral-procession-like-walks; and the thin shoes and spider-web stockings of necessity cause the capillary circulation through the extremities to become languid, and the wearer to suffer all the debilitating influences of cold.

Nor can we refrain from adding a word or two of caution against the forced and too early over-cultivation of the intellectual faculties. It never was intended that a boy of six or eight should be taught German and French and Latin, and at least the Greek alphabet; to say nothing of the other "sciences, writing, arithmetic, and the use of the globes." We experienced a thrill of horror only the other day, on looking over a printed list of subjects we were assured by an anxious parent were all taught at a training establishment of this description near London, and which he fancied could be understood by his son, a boy of not more than twelve. Other parents will tell you, "that it does seem a good many things for a boy to learn, but their son is particularly strong, and can bear it very well; besides he *will* learn, and there is no keeping a book from him." Such a boy is the one of all others we would most anxiously guard against the cramming system. This is a high-pressure age, and never was it more urgently the duty of the physician to caution parents against allowing an amount of food to be given to the brain which it is quite impossible it can bear. How often has a fond father and mother, proud of the acquirements of their darling boy, boasted of his talents to their friends, and if the medical adviser has ventured a caution, how quickly have they replied, "it does not at all hurt him!" This is very wrong every way. In the first place, even if the brain do not become softened, and the once quick boy

converted into an idiot, by this over-culture, he will be no further advanced in his studies at twenty, than another boy who has been more judiciously educated—educated so as to preserve the "*mens sana, in corpore sano.*" What does this excess of study prove, but that sedentary habits are indulged in, and weakened digestive powers, constipated bowels, mal-assimilation of food, tuberculated lungs, &c. &c., are the results? More than this: the brain, like any other organ, becomes exhausted by over-exertion; the nervous system is weakened, and these functions being defective, not only does the mind decay, but all the organs of the body share in its debility; because all of them receive a diminished and vitiated supply of nervous stimulus, a proper share of which is highly requisite to their health. This mental depression, the result of a taxing of the dawning powers of the youthful mind beyond what they are able, is a chief cause of thoracic consumption; and parents will do well to regard this caution, and every physician of experience will join us in reprobating this injurious system. The over-taxing of the mental powers ought to be avoided in even the most robust children: how much more so in those in whom there is a strong hereditary tendency to the tuberculous constitution! In all boys and girls of delicate frame, the period for study should be considerably reduced, and that for exercise out of doors much increased. The school-room should be large, and well ventilated. The same remark applies to the sleeping apartment: each child should have a separate bed, and the number in each room not so large as to taint the atmosphere, and render it unfit for the purposes of respiration.

Allusion has already been made to the hereditary transmission of tubercular diseases, and of the misery that must inevitably result from a union between two young people both labouring under a constitutional taint. This is a subject of much delicacy—one on which the physician is seldom consulted; but it is nevertheless one highly important, and one well worthy the most painful consideration of every rational being.

It would be well for parents to remember that the happiness of their children will depend upon themselves, and that the sins of the fathers pass downwards to the third and fourth gene-

ration. Dyspepsia in all its forms requires at once attention ; and the importance of this class of diseases will become still more apparent when we consider that the evils of a long-continued disordered state of the digestive organs end not with the life of the individual ; they are entailed on the unfortunate children, and step by step the disease degenerates as it descends, until the dyspepsia or gout of the father becomes scrofula or thoracic consumption in the son. How many parents labour to hand over wealth, and estates, and titles, to their children ! how few, to adopt a more healthy and rational mode of living, that property may be accompanied with that without which it is altogether valueless—health !

As the tuberculous constitution may be formed even before birth, the young mother will do well to remember—and it is the duty of the physician faithfully to teach and to tell her—that it will depend in a great degree upon herself whether the child within her be robust or not. Stimulants of all kinds should be avoided, and exercise taken daily in the open air ; and it is hardly necessary, we hope, to add, that the ball room—public assemblies, the theatre—every thing which can tend to violently excite the mind, are injurious, and consequently to be shunned. The health of the infant will depend upon that of the mother, and from the first moment of pregnancy until the birth she is accountable for her child. If the mother be of a strumous diathesis, if consumption has ever been known in any member of her family, it will be well at once, both for her own sake and for that of her child, that a young and healthy wet nurse be provided. In three or four months a few spoonfuls of meat-tea may be given daily. Exercise in the open air, cleanliness, ablution with tepid water, and cold affusion to the head, than which nothing more powerfully tends to prevent congestion, supply a rational method for managing children ; but yet it is one even now too generally neglected. Parents, and nurses, and friends, are so apt to consider consumption an “exaggerated cold on the chest,” that its prevention is thought to consist of precautions against taking cold, instead of the plan which is calculated to give health and vigour to the body. As the child grows apace, attention must be

paid to every function : a sufficient quantity of plainly cooked animal food, a glass of bitter beer, or porter, at dinner, milk night and morning, sea-bathing, or a cold bath twice a week at home during the summer months, is the plan of treatment we have found most conducive to the strength of the growing body. When the age of puberty has arrived, the peculiar functions of the female will require every attention. In the boy the state of the nervous system must be examined, and if need be, in both sexes, an end put to practices which are far too common, and which excite a marked influence in developing the tuberculous constitution.

What has been said of the overstraining of the mental powers in childhood, may be repeated here : how many young men are yearly offered up as victims on the altar of ambition ! how many, when too late, have

“ — view’d their own feather on the fatal dart,
And wing’d the shaft that quiver’d in their heart.”

It is truly wonderful how comparatively seldom thoracic consumption is developed in those who have been brought up in the pure air of the country, and properly fed and subjected to a judicious prophylactic treatment.

A question often will arise as to the removal of a patient to a warmer climate, when a suspicion of the deposition of tubercle is created in the mind of the patients or their friends. A sheltered situation should be selected, as far removed as possible from the middle of large towns. The house should have a southern aspect, and the apartments be spacious and lofty. The bed-room should be aired during the day by a fire, so as to prevent a chill on going to bed. The patient should repose on a mattress, and the bedding be exposed every day to the air. The hours of repose should never be less than ten. Pure mild air is always essential ; but the question of removal from home is often considered at too late a period. When it is thought desirable, *Hastings*, *Clifton*, (*Brighton* in the summer), *Torquay* and *Undercliff*, in the Isle of Wight, all possess many recommendations ; we give the preference, for winter quarters, to *Torquay*, from its sheltered situation, by which the invalid escapes the cutting winds from the north and east : the surrounding country is beau-

tiful and picturesque in the highest degree, and the accommodations excellent.

For a more particular account of the climates of other countries, every information will be found in the able work of Sir J. Clark. The climate of *Madeira* is most certainly the best adapted for those who have a tendency to consumption, and the nearest approach to this are the *Bermudas* and *Canary Islands*. We look, however, on *change of climate only as a preventive of the development of tubercle, and not as a cure for consumption*. Where there is a strongly marked predisposition, a residence of three or four years in a warm climate about the age of puberty, may be, and often is, highly advantageous. But when the disease is more advanced, when the tuberculous deposit has taken place, very great caution is required before venturing to send the patient away. When the disease is still more advanced, it is cruel to do so—cruel to expose any one in this condition to the fatigue of travel: far better is it to permit the patient under these circumstances to remain at home surrounded by friends, enjoying the society of those who are dear, comforted and blessed by their attentions, than to wear out the system by going from place to place, in a distant country, to expire among strangers, and be buried on a foreign shore.

Pure air—a nourishing but not too stimulating diet—exercise daily out of doors, more especially on horse-back—the improving of the contracted chest, by frequent deep inspirations, and the use of dumb-bells—warm clothing, and particularly of the chest and feet—cleanliness—cold baths, sponging with cold salt and water, and friction to the skin—the most rigid temperance—the abstaining from every vicious indulgence, and from every possible cause which may produce mental and bodily exhaustion, as well as from those occupations which are known to be injurious to health,—attention under the superintendence of a medical man to the state of every function, particularly of the digestive organs—are the means which long experience has convinced us are best calculated to prevent the formation of tubercles in the lungs.

These are considerations of national importance, for we fully agree with Sir James Clark that a very large propor-

tion of those who die of consumption from twenty to thirty, might be saved by the timely daily adoption of these simple measures.

8. *Treatment of Thoracic Consumption.*

Hitherto we have considered how the deposition of tuberculous matter in the lungs may be best prevented; it remains to examine how thoracic consumption can be arrested in its progress when incipient, or limited in degree, and how the pillow of the sufferer may be best soothed when the disease has made such progress as to preclude all hope of preventing, soon or late, a fatal termination. Dr. Latham has very properly divided phthisis into the *mixed* and *unmixed*; and this division is of practical importance; for our treatment, both with regard to diet and the remedies administered, must be so regulated as to give every support to the system; but at the same time care must be taken not to set up an inflammatory action in the pulmonary tissue around the tubercles. It is, therefore, quite impossible to say, with some authors, animal food and porter is the best diet for patients labouring under thoracic consumption; or, with another, give nothing but asses' milk, rice, bread, and potatoes. Both may be right, and both may be wrong. Every case of this disease presents in itself a study for the physician—every case will demand at his hands the most careful attention, and it will be for him so to regulate the treatment as to avoid either an increase of the local mischief by an over-stimulating diet, or a further degeneration of the system by reducing the general strength.

In whatever way the strength is reduced the deposition of tubercle will be augmented: in doubtful cases milk and beef-tea may always be given; but if an error be committed it is generally rather by reducing the strength of the patient from a fear of inflammation, than by giving a generous diet.

Some sixteen years ago, we well remember that it was a common practice in London with many practitioners to take small quantities of blood from consumptive patients, especially in families where one or more brothers or sisters had died from the disease; such patients were certain to be kept in warm

rooms, and the means employed to prevent their "*taking cold*" were very amusing. Under this plan of treatment patients died very rapidly; and no wonder. Such a system, by depressing the general powers of the body, rendered the deposition of tubercles certain, and induced a rapid increase where such deposition had already taken place. We ought to guard against taking cold in such patients—in such as we are now treating—those in whom tubercles are already present, by sponging the chest with cold vinegar and water night and morning; by constant exercise, either walking, on horseback, or in a carriage; and the use of the shower-bath three times a week. The shower-bath may be used warm at first, and the temperature gradually reduced, until it becomes cold, and there is no more certain way than this, so to "*harden*" the body as to remove the liability to take cold.

In our own practice we place considerable reliance on *counter-irritation*. We are quite certain that in many cases permanent good has resulted from the application of an issue on either side of the chest.* We have now under our care a young lady, and also a young gentleman, in whose lungs tubercles exist, and in both the greatest good has resulted from the repeated application of small blisters to different parts of the chest. The objection to setons and to issues is often great, both on the part of the patient, especially if a young lady, and her parents; but let it be told them that the question is not one of like or dislike, but of life and death, and the objection will vanish. A singular example of the efficacy of counter-irritation in phthisis is related by Dr. Abercrombie. In this case cerebral disease had this effect, and the previous symptoms of consumption disappeared. We were consulted two years ago by the family of a gentleman, aged 33, who was then labouring under confirmed phthisis, and in whose left lung a cavity of some size existed. Shortly afterwards he was attacked with mania, and the disease has remained stationary. We

remember a case at St. George's Hospital, in which a scrofulous arm was amputated by Mr. G. G. Babington, and the patient rapidly sank from phthisis: this fact has been pointed out by Sir B. C. Brodie, and we have often, when his pupil, heard him say, that after amputating a leg for scrofulous disease of the ankle-joint, symptoms of consumption, not before observed, set in, and the patient died in a short time.

In the absence of hæmoptysis and symptoms of pulmonary congestion, various preparations of steel are of great benefit. It often happens that a young lady or gentleman is brought to your house by a friend, anxious about a slight cough, which the patient ridicules, and characterises as of not the slightest possible consequence. A complaint is made of feeling languid, and every night there is more or less profuse perspiration, and this tendency to night sweats it is very necessary at once to check. The pulse is generally tranquil, and there are no symptoms of hectic fever. There is no dulness on percussion, but the *expiratory murmur* is prolonged; and this is a symptom already noticed as one of the earliest tokens of the tuberculous deposit. For such we prescribe some preparation of iron: our favourite form is this—℞ Ferri Sulphatis, gr. x.; Acidi Sulphurici Diluti, ℥j.; Tr. Hyoscyami, ℥ij.; Infusi Cort. Aurantii, ℥viiss. Misce, capiat cochlearia duo ampla ter in die. Or the following, which is much more pleasant, may be substituted:—℞ Ferri Ammon. Tart. ℥ij.; Extract. Glycyrrhizæ, ℥ij.; Syr. Aurantii, ℥ij.; Aquæ Rosæ, ℥vijss.; Tr. Hyoscyami, ℥ij. Misce. Capiat, ℥j. ter in die. The bowels will best be regulated by some such pill at bed-time as this:—℞ Ext. Aloes (Aquosi), gr. j.; Ext. Taraxaci, gr. vj.; Pulv. Ipecac. gr. ½. Misce, ft. pil. ij. pro re nata. Or a draught of the Di-sulphate of Quina, with the Tincture of Hyoscyamus, and a drop of Hydrocyanic Acid, may be substituted for the steel. This plan of treatment,—by counter-irritation, steel, quina, sulphuric or nitro-muriatic acid, with shower-baths, sponging with cold salt and water, constant exercise in the open air, on horseback, or in a carriage, with a nutritious regimen (meat, and bread and milk for breakfast; for dinner, meat, bread, and porter, or bitter beer;

* "I look on issues and setons as one of the most important means in the prevention, if not in the treatment, of phthisis. I consider their advantage very great."—Dr. Graves's *Clinical Medicine*, p. 292.

for supper, milk and bread, and a little calves' feet jelly, and no tea),—will often stop the exhausting perspirations, and check that tendency to debility which so rapidly promotes the formation of tubercles. Quinine and the mineral acids often appear to the patients and their friends singular remedies to cure "a cough;" and going out into the open air the mother assures you "must give her daughter cold:" but this plan of treatment in the early stages of phthisis we are satisfied is the only rational one; at least so we have found it, after an extensive experience in these diseases for many years.

It is a singular fact, that when the dilute sulphuric acid is combined, as first proposed by Dr. Graves, of Dublin, with the Tr. of Hyoseyamus, the remedy is much more valuable, and this combination both gives vigour to the system, and checks the cough, which is apt to be increased by the acid, unless the sedative is added. When the perspirations are unusually troublesome, and do not yield to this remedy, tannic or gallic acid, given three times a day, is occasionally useful. In the first period of thoracic consumption we have given the cod-liver oil in numerous cases,—in many with very great advantage; but it is in the second and third periods of the disease that this remedy has in our own practice appeared most marked in exerting a beneficial influence. We have been furnished, with a view to publication in this journal, with an interesting extract from the journal of a professional gentleman whom we have known for many years, of considerable talents, and who has repeatedly been under our care: in him the hereditary predisposition is as strongly marked as possible, and when we saw him first, his condition appeared so hopeless, that we are induced to give the preference to this case over many others in our case-book, as exhibiting the value of cod-liver oil in certain constitutions, and at certain periods of the disease.

A. B., æt. 29. "I began in the June of 1848 to take Bell and Co.'s cod-liver oil, in doses of three table-spoonfuls *per diem*, together with nitro-muriatic acid. This I continued till the first of September, 1848, but derived little comparative good from it, which I attribute to my having been very careless as to my

diet, eating and drinking most unwholesome things, as well as to the greater portion of the oil which I took (and which was not Bell's) being of an inferior quality. In September I was attacked by pleurisy, and did not touch cod-liver oil again till November, when being in a very reduced state, and weighing about 10st. 4lb., I was recommended to resume it. At this time my cough was violent. I had profuse night sweats, and my expectoration, which was considerable, was frequently tinged with blood.

"I began the oil (which was foreign, *Dantsic*) by taking a dessert-spoonful twice a day, then I increased to a table spoonful in the morning two hours before rising, and one the last thing before going to bed. This I continued from the 2d of Nov. 1848, to about the middle of January 1849. My weight during this time was as follows:—

1848.	st.	lbs.	
11th Nov.	10	6	} at Brighton.
6th Dec.	11	0	
21st Dec.	11	1½	
1849.			} at Hastings.
22d Jan.	11	6½	

"My diet during this time consisted of a pint of warm milk in the morning, about an hour after the cod-liver oil; for breakfast I had tea, bread and butter, and bacon, with two or more large raw apples; for dinner I had mutton, roast or boiled fowl, some roast beef, and potatoes and turnips; light puddings, tapioca, arrow-root, sago, &c., with roasted apples; and for supper I had a bowl of arrow-root, with a toast: I drank toast-water and weak tea.

"For about three months and a half following the last mentioned period, I only took a table spoonful of cod-liver oil in the morning.

"My weight was:—13th Feb., 11st. 10lb., at Hastings; 17th May, 11st. 8lb., at London. I then left off the use of cod-liver oil almost altogether, or I took it in small quantities, varying from a desert to a tea spoonful. My weight was:—4th July, 11st. 2lb.; 17th, 11st. 2lb.; 16th Aug., 10st. 9lb.*; 27th, 10st. 8lb.; 29th Sept., 10st. 6lb.; 24th Oct., 10st. 9lb.; 23d. Nov., 10st. 5lb.; 17th Dec., 10st. 6lb.; 30th Jan., 10st. 6½lb.;

* Allow 4lbs. for light dress.

23d Feb., 10st 5lb. Highest weight attained, 11st 10lb., 13th Feb. 1849; lowest weight, 10st 5lb., 23d Feb. 1850.

"I may observe that the cod-liver oil which agreed best with me, and on which I fattened most quickly, was the *unfiltered*. This I think keeps good the best also: it is to be got very good at Allen and Co.'s, Plough Court, Lombard Street.

"When I was away in the country, contrary to the advice of my physician (Dr. Hall), I was bled, and this (September 1848) very much reduced me. I ought to have added that I derived much benefit from his prescription of repeated counter-irritation, by a small blister under each clavicle, and this I have applied very frequently up to this time, and always with great advantage. —Hastings, Feb. 1850. A. B."

When we first saw this gentleman, the disease had reached the second period, and was, in the opinion of one of the most able physicians in this country, almost hopeless. Under the use of the oil, counter-irritation, and an appropriate selection of residence during the winter, a valuable life has been prolonged, and with care and attention it is probable that our friend may live for some years. At any rate, the chances are much more in his favour than when the oil was first taken two years ago.

It would be of no practical importance to give case after case of the results of this remedy in detail, as we have observed them in our own patients. As already stated, the utility of cod-liver oil has been greatest at the time when the process of softening has commenced: the physical signs of softening, characteristic of the second period of thoracic consumption, have been already described. When the patient has laboured for a long time under a severe cough; when he has appeared sinking under copious night sweats, with opaque, muco-purulent expectoration; when attacks of hæmoptysis have occurred more than once, and when dulness under one or both clavicles, and above the scapula, defective movement of the chest, and breath-sound,—when there is also beneath the clavicle a moist bubbling sound (*muco crepitation*), and when tubular breath and voice sounds towards the root of the same lung have fully proved the arrival of the second period of thoracic consumption, cod-liver oil

has certainly produced the most wonderful effects. In one gentleman in particular, W. O., a solicitor, aged 29, after taking the oil (when the condition just described was fully developed) for about a fortnight, in doses of two teaspoonfuls three times a day, the perspirations diminished, and in less than a month the expectoration was considerably reduced in quantity, and not so opaque. In six weeks he had lost also a good deal of the crepitus, and under the use of the oil, and counter-irritation, with an embrocation of croton oil, liquor potassæ, and olive oil, the breath sound became less moist and more clear. To this gentleman the oil was given in the compound infusion of orange peel, with a few drops of nitro-muriatic acid, one hour after breakfast, one hour after dinner, and one hour after tea, for the reasons we pointed out in the *MEDICAL GAZETTE** more than a year ago; and we have seldom found the oil, if pure, and of a good quality, objected to when given in this way. If sickness be induced, a drop of hydrocyanic acid (*Scheele's*) may be added to each dose.

Mr. O. went down to the sea-side, and we did not see him again for nearly three months. During the whole time he continued to take the oil, and had gained in flesh and good looks. His appetite was very good, and the night perspirations had left him. He told me he could walk a long distance without fatigue, and that, in fact, he was quite well. On examination, the most satisfactory proof was afforded that a gradual removal of consolidation had been taking place; for, on applying the stethoscope under the right clavicle, where there had been the greatest signs of mischief, the restoration of a clearer breath-sound was most evident. Still, with all this apparent restoration to perfect health, the foot-marks of the enemy might still be traced. That ugly prolonged expiratory murmur was still present, and a tubular sound towards the root of the lung on the right side could be detected. We advised a seton to be placed under the clavicle on the right side, and the oil still to be continued. It would have been interesting to have traced the condition of this gentleman in after years; but, unfortu-

* On the Use of the Pancreatic Juice. By J. C. Hall, M.D., *MEDICAL GAZETTE*, April 13th, 1849.

nately, about three months after this, an attack of typhus fever proved fatal, and no opportunity was afforded of examining the body. Up to the time of this attack of fever, the disease in the lungs had made no progress. He was neither better nor worse than when he returned from the sea.

In one case, even in the last stage of the disease, the powers of the remedy in staying the complaint were very remarkably exhibited; and, without pretending for one moment that cod-liver oil is a specific in thoracic consumption, we may certainly claim for it a power of arresting its progress greater than that possessed by any remedy with which we are at present acquainted. The conclusion arrived at by the physicians to the Hospital for Consumption at Brompton is, "*that cod-liver oil is productive of more good in the treatment of phthisis than any other agent yet employed.*" It appears also from the experiments that have been made in this hospital, that various kinds of the oil have been given without producing any marked difference in their curative effects. In private practice we have found it impossible to get our patients to swallow the darker kinds of oil, and for medicinal purposes there can be no doubt that the oil should be selected of a pale colour, with as little of a disagreeable taste and smell as possible. This will be of a pale straw colour, if obtained exactly as it was secreted, and in the same condition as it exists in the hepatic cells of the healthy liver of the cod fish. The dark oil is procured from livers that are more or less putrefied; and to this cause, and to *roasting, in order to get more oil*, the disgusting taste and odour is due.

It would be out of place here to speculate at length on the exact way in which cod-liver oil produces a beneficial effect on the system in thoracic consumption. The researches of Simon have shown that in one case of phthisis in which the oil had been given, the fibrin was reduced below the normal proportion, and the albumen (which amounted to nearly thirteen per cent.), and other principles of the blood, increased very considerably. It is probable that cod-liver oil proves beneficial as a nutriment to all the textures. Not only is fat deposited in the adipose tissues, but the muscular powers are often increased most wonderfully by it; and the bloom of health

which is seen upon the cheeks, and the change which sometimes takes place in the once white lips, now red, prove that, in some way or other, a change has been effected in the circulating fluid, and that the vessels contain healthy and nutritious blood. That these results follow the exhibition of cod-liver oil is certain; but even Dr. Williams, who has paid great attention to the subject, says, it is yet a question whether the oil "proves nutritious by direct conversion into albumen, or fibrin, or by preventing the waste of the albuminous principle by protecting it from the action of the oxygen absorbed in respiration." It is also thought that the oil itself may supply fat molecules,—requisites to healthy nutrition, as forming the nucleoli of the primary cells, or rudiments of tissues. This was first discovered by Dr. Ascherson, of Berlin, and it is now admitted that fat does form the central portions of the elementary granules and cyto-blasts of textures, although the explanation of this writer, *that these cells are formed by the power which fat is said to possess of coagulating albumen* around it, is not so clear. Dr. Hughes Bennett has remarked,* in scrofulous diseases there is a want of fat, and that the albumen derived from the food in digestion is liable to be precipitated in an unorganisable condition (as tubercle, &c.) from the want of it. Dr. C. J. Williams says,† "that the chief salutary action of cod-liver oil is, not that it supplies fat where it is wanting, but that it supplies fat of a better kind, more fluid, more divisible, less prone to change, and more capable of being absorbed into, and of pervading the structures of the body: thus, affording a fine molecular base in the chyle, and therein a material for a better plasma, and being conveyed into the blood, and distributed through capillaries and around deposits, by dissolving the crystalline and irregularly-concreted fat scattered through them, it renders them more amenable to the process of reparation and absorption." Hence its beneficial operations are more evident in those stages of tuberculous disease in which the deposits abound in fat, or where softening has

* Bennett on the Oleum Jecoris Aselli, p. 58; also On the Structural Relation of Oil and Albumen in the Animal Economy, read before the Royal Society of Edinburgh, 1847.

† Principles of Medicine, 2d edition, p. 404, and On Cod-liver Oil in Phthisis. London Journal of Medicine, Jan. 1849, pp. 14-15.

taken place. It does not follow, however, that the change for the better can in such cases be of long duration; for both the lungs and the system generally are in all probability too deeply implicated in the mischief. Still for a time, even occasionally in the worst cases, the oil produces the most marvellous effects.

The indications of treatment, therefore, when thoracic consumption is established, are—1st. To subdue inflammation, whether occurring in the form of bronchitis, pleuritis, or peripneumonia; 2d. To support the strength by nourishing food and appropriate medicines,—to subdue irritation by narcotics, and to remove urgent symptoms of various kinds as they make their appearance. These it is not our intention to discuss in detail, as such considerations belong rather to systematic works on the practice of physic, than to bed-side sketches of the cases that have been under our care. The troublesome cough which wears out the patient, in the advanced stages of the disease, we have often seen much relieved by *aniseed*, which appears to have a singular power in allaying the irritation from which it arises. So great an authority as the late Dr. Prout has advised that three drachms of the aniseed should be bruised, that a pint of distilled water should then be added to the seeds at a temperature of 120°; this is to stand until cold, and to be used as a vehicle for hydrocyanic acid, or any other medicine you may wish to give. We have often seen its administration productive of much good, the cough becoming less frequent and violent. In the great majority of cases, towards the end of the disease, some preparation of opium will be the only remedy on which we can rely, both to soothe the cough and check the diarrhoea, which is always present. This often depends on ulceration of the intestines, and then it is very difficult to arrest. Catechu, tincture of opium, and the chalk mixture, full doses of the tris-nitrate of bismuth, or a pill containing the one-third of a grain of the sulphate of copper and one-quarter of a grain of opium, frequently prove serviceable, and the poor sufferer will often obtain rest at night by the injection of about two drachms of starch gruel with twenty drops of laudanum.

We had about two years ago as a patient a young lady who before her

death from phthisis was harassed with constant nausea and vomiting, with pain and considerable tenderness over the epigastrium. Here the mucous membrane of the stomach was thinned and softened, and nothing gave much relief. Her distress was most mitigated by the application of a blister, and the administration of an effervescing mixture with hydrocyanic acid, and a few drops of the liquor opii.

We have not said anything of the administration of iodine in thoracic consumption. We have many times given the iodide of potassium internally, in the compound decoction of sarsaparilla; but the results have not been particularly satisfactory. If of use at all, it is only in the early stages of the disease, and in the absence of fever, inflammation, and a tendency to hæmoptysis.*

But whatever the remedies we may administer, and however beneficial we may consider them, every day attention must be given to those plans already pointed out as the best calculated for sustaining the strength of the body,—those hygienic measures by which the health of the constitution is ever best promoted; for the absorption and removal of tubercles from the body (and that tubercles are occasionally absorbed is now a fact placed beyond the possibility of doubt) will best be accomplished by a free and active circulation through and around the diseased portion of the lung, care being taken not to set up irritation in the part.

This being the case, the utility of regular exercise,—of friction and counter-irritation over the seat of the disease,—of daily washing the whole of the body with salt and water,—of the free respiration of pure air,—of nutritious food,—must be evident, since it is for the most part by the oxidating current of arterial blood, which the more active circulation, resulting from an improved condition of the general health, directs to the vicinity of the tuberculous depositions, that their gradual absorption is accomplished.

* "Whether the iodine and alkali ever directly promote the solution or absorption of tuberculous matter, I am still in doubt. The iodide of iron I have found beneficial in cases of general weakness, but I have seen no reason to suppose that it promotes the removal of tubercles already formed."—Dr. C. J. B. Williams, *Principles of Med.* 3d ed. p. 402.

