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Some observations on the treatment of cough as a symptom in disease

A very common symptom which the general practitioner is called upon to treat is cough, and it is too often the practise to prescribe a linctus after a very superficial examination of the patient. The cause of the cough should, if possible, in all cases be determined as in many patients only systemic treatment will be of any avail while often both general and local treatment may be necessary. It is also well sometimes instead of allaying cough to encourage it, or on the other hand, one may be compelled to stop a 'useful' cough on account of its

2.
results, as for instance, where it might lead to apoplexy, hernia, exhaustion, by disturbance of sleep, or even fracture of ribs etc. One must also remember that cough is an effort of nature to expel something from the respiratory tract and that even what seems a 'useless' cough i.e. a cough with no expectation or with no satisfaction after it is completed, may result in the expulsion of small quantities of unknown irritating gases, or may bring about certain changes in the tract tending to natural recovery. Therefore, before taking any steps in treatment, one must carefully answer the question, "Shall I interfere with this symptom

at all?"

The following are some methods of general treatment :-

I Atmospheric treatment. All coughs arising from a lesion of the respiratory tract ought to be treated by having the patient reside in as uniform a temperature as possible, or if the temperature varies the change should be a gradual one. One advantage which patients have who are adopting the open air treatment for disease is, that the outdoor atmosphere changes very gradually and the exposed surfaces of the body including the respiratory tract have time to respond thereby avoiding reflex fits of coughing. The best temperature is the one

in which the patient feels most comfortable (within of course reasonable limits.) I have often been able to ward off an attack of coughing in patients passing from a warm to a cooler atmosphere and vice versa by getting them to breathe entirely through the nose during and for some minutes after the change. For coughs associated with acute conditions, the patient must in this country and more especially in the cold months be confined to an artificially warmed, room kept at a uniform temperature, and care must be taken to have the air moist. In most kinds of cough with respiratory lesions the bronchitis

Kettle affords some relief, but I have not seen any marked good results from using any drug or volatile oil in the steam. All cold draughts of air, dust, smoke etc must be avoided as these set up a reflex expulsive cough. Many coughs associated with chronic respiratory diseases would I believe do well with open air treatment applied in a rational fashion. I have made several old people with chronic bronchitis live and sleep practically in the open air and without exception each has derived benefit. The tone of the respiratory expulsive muscles is much improved, expectoration is easier, and in consequence they

do not cough so much or so violently as before. Climatic treatment will be referred to further on.

II Clothing. In connexion with clothing it is important to see that there is proper ventilation of the skin as well as absorption of the perspiration & these indications are carried out by wearing woollen garments next the skin, but above these the clothing should be as light as possible consistent with keeping off chill. It is better by not wrapping up the skin too much to allow it to respond to changes of temperature. There is no strong reason why the winter clothing should differ much from the summer clothing further than wearing an overcoat when out

of doors or in an unwarmed atmosphere, as the indoor temperature is raised by fires etc. The skin response to temperature in well to do classes is often spoiled by wearing too many clothes, while we see labourers working in wet and draughty places without ill result because the skin response is active. The above reason probably partly accounts for 'colds' being much commoner and treatment less satisfactory among the rich than among the poorer classes. Going into an unwarmed bed may excite a cough which may keep the patient awake for hours, so that this point must

be kept in mind when a patient complains of cough on going to bed.

III Rest is important and essential in the treatment of many cases with cough. The coughing muscles are better able to do their work, but apart from that the tissue changes which take place in the process of recovery from the disease causing the cough go on much more thoroughly and rapidly. One of the best methods of treating the cough associated with a 'common cold' is to put the patient to bed for three days rest. In this way rapid change of position, which frequently sets up cough, is avoided, and all such predisposing

postures as stooping etc. I have treated a patient with a 'cold' by putting him to bed in a room at 60° F, and this has resulted in a better and quicker recovery, than when he was treated by drugs, food, baths etc at another time when he was allowed to remain out of bed. Beside rest in bed there should be mental rest since emotion, laughing, talking and even moving may set up reflex cough. Exercise, on the other hand, by its tonic effect does good in many subacute and chronic coughs. Whatever form of exercise be taken it must stop short of fatigue, else a cough from pulmonary congestion may be set up.

IV Baths Bathing the body surface daily is good for every one, but especially for those suffering from cough, for it is well known how the skin and the pulmonary respiratory surface may take up each others action. In conditions where cough is the result of systemic poisoning, if the skin be made to act freely the toxic material may in great part be excreted by it and excessive coughing thereby avoided.

The old fashioned remedy of bathing the feet in mustard and water as hot as could be borne at the beginning of a 'cold', had the effect of a bath by promoting diuresis. Very hot gruel or 'toddy'

as an adjunct, aided in the efficacy of this remedy. Turkish and steam baths may also allay coughing by acting in the above manner.

V Diet In all cases of Cough the diet must be considered, and it will vary according to the disease causing the cough. In cough arising from acute diseases of the chest with a high body temperature, a fever diet should be ordered, while in the cough of chronic disease the diet ought to be pushed as far as the assimilative powers of the patient will permit without causing any indigestion. The practise of so-called overfeeding in phthisis

pulmonalis has I believe been now entirely given up, as it not only increased the amount of cough, but also in many cases excited violent indigestion, and instead of doing any good, did a great deal of harm. I have a patient at present suffering from phthisis pulmonalis, who, whenever she takes even a small quantity of cream, has a fit of coughing soon afterwards, and the coughing continues till she vomits up the contents of the stomach. In this patient the cream acts as the irritant setting up a reflex cough.

VI Change of residence or climate may be necessary to comply with some

of the above mentioned indications for the relief of Cough. Residence in the country to escape the dust, smoke and microorganisms of the atmosphere, where these are the cause of the reflex cough may be necessary. A change from the country to the city or the sea coast is indicated in these cases where the pollen of flowers sets up the well-known asthmatic cough. A change of residence may also be beneficial by removing the sufferer from the presence of foul odours or of sewage gases which may cause a reflex cough by direct irritation of the respiratory passages during their inhalation or their excretion.

A voyage in a warm climate may stop a cough. I once saw the cough of phthisis stop completely during the week of passing through the tropics aboard ship. The disease was of about eighteen months duration during which time the person coughed violently several times a day — it reappeared and remained as before out of the tropics. This fact suggested to me that treatment of respiratory diseases, and especially phthisis, might be carried out on a vessel adapted for open air treatment which could cruise just outside the tropics. Something after the method of Keys system of ventilation would be required to ensure a proper

supply of air to the cabins. The idea, I believe, was to be carried out by a German company, but so far I have not heard of any result. A number of phthisical patients have informed me that at first their cough increased during a stay in places of high altitude, but afterwards diminished both in its frequency and severity even although in some of the cases the disease itself had progressed.

In dealing with the further treatment of cough I have drawn up the following :-

Reflex
Expulsion. { Foreign bodies + tumours in respiratory tract.
Exudations in respiratory tract.
Inhalation of gases.

Reflex
Irritation. { Irritation
Surface of skin
Ear
abdomen: Stomach
Liver
Kidneys
Intestines
Genital organs

Central
Irritation. { Emotion
Hysterical cough
Puberty cough
Habit
Tumour

Reflex expulsion.

Foreign bodies and tumours in the resp-
iratory tract. A very frequent form of
foreign body is the decaying or 'dead'
tooth which, if not constantly washed

and cleaned, causes a certain amount of septic matter to pass into the throat and stomach. This may cause by infection inflammatory mischief which in turn excites cough, consequently bad teeth must always be stopped, or extracted. I have known a person to be very much subject to coughs & colds until he had all his dead teeth extracted. One might put forth many reasons for this, but Dr. Lepari of Palermo in 1890 conducted experiments which showed that cold air paralysed the epithelium of the respiratory tract, including the ciliated epithelium of the bronchi. - that being so the septic matters from dead teeth easily infect such less resistant tissues and inflammatory

reaction in this way would be the starting point of a cough. The well known fit of coughing set up by fluids or food getting under the epiglottis generally occurs in persons who are not paying sufficient attention to their sensations while eating - quietness and ease at meals will prevent the occurrence. Tobacco smoke is a factor of this class, but still worse is the smoke of cigarettes which can be and often is inhaled further into the air passages. By inhalation of this smoke cough may be produced at the time but prolonged irritation from this cause may set up a cough due to a form of inflammatory mischief which will fall under another heading. Therefore tobacco smoking and especially

cigarette smoking must be avoided, but if the person will smoke, cleansing of the mucous membranes immediately after finishing will minimise the effect on these parts. Snuffing and chewing ought to be avoided entirely as well as eating highly seasoned foods.

Any nasal polypi should be eradicated. These may not be suspected until an examination of the nose and naso-pharynx is being made with a view to finding the cause of a hitherto unexplained cough. In the same way, and especially in children adenoids may be the source of a hacking dry cough; the child, in fact, may be losing flesh due to disturbed rest and so lead the parents to suspect phthisis.

pulmonalis, when on examination of the naso pharynx with the finger these growths may be detected, and their removal cause a complete cessation of the alarming symptoms. Excision of part of a long uvula may cure a cough which is excited by lying down, but this happens more frequently in people with irritable throats, the irritation probably arising from some other cause. Surgical treatment of a bifid or malformed uvula may also be necessary in dealing with an otherwise unexplained cough. The excision of enlarged tonsils will frequently cure a cough in a child, as this condition is usually accompanied by a degree of pharyngitis, but if the tonsils be of considerable size they alone may be

the cause by exercising pressure on the neighbouring parts. Cough caused by the presence of tumours pressing on the pharynx or on the lower respiratory passages can only be cured by the removal of these tumours as nature attempts at expulsion of the seeming obstruction will go on until its removal. Enlarged mediastinal glands may also be the cause of a paroxysmal or asthmatic cough. This affection may be easily overlooked. Such coughs can be treated symptomatically by sedatives of which the milder forms like Iodide of Potassium etc should be tried and in event of failure of these, recourse can be had to opiates. A retropharyngeal abscess

may require to be opened. A hacking dry cough in children may be caused by enlargement of cervical or retropharyngeal glands - here *Syr Ferri Iodid* is indicated as well as conditions for the better nutrition of the child, who is usually in a debilitated condition. Cough arising from carcinoma or sarcoma in or adjacent to the respiratory passages does not as a rule call for special treatment, which would in any case be limited to opiates. That from aneurysm would also be placed in the same class.

Exudations in the respiratory tract.

Exudations, especially those of a purulent character from the surfaces of

the mouth and fauces may cause cough by their secondary effect on the pharynx etc in the same way as 'dead' teeth, so that in the treatment the mouth must be examined and any pathological exudation checked. The hygiene of the mouth must always be attended to. Exudates also from the antrum of Highmore, the frontal sinus, the sphenoidal and ethmoidal cells, from rhinitis and ulcerations in the nasal cavity may trickle over the soft palate and give rise to cough for which the treatment will consist in the removal of the cause of the exudation. The cough from these causes is more likely to be troublesome during sleep as the position favours the backward passage of the

exudations. A certain amount of relief might be got by lying on as much of the face as is consistent with free respiration, and having this position partly enforced by fixing an ordinary thread reel in the back of the sleeping dress. The cough in the first or dry stage of the 'Common Cold' as well as the disease itself has been treated in many and different ways, but after a trial of numerous methods I find none better, if the patient has to get about, than the administration of $\text{gr } \frac{1}{12}$ of the S. S. Antimonium Tartaratum every four hours. A saline purge is a valuable adjunct to this treatment. The Antimony also relieves the tightness across the chest, which is so often complained of and one

can place all the more reliance on this remedy administered in association with a high tension pulse. In many cases the 'cold' is cut short in the dry stage, but if not the exudative stage is hastened and expectoration allowed to go on freely, in this way decreasing the number and severity of the coughs. Antimony used alone is an old remedy and I think is to be preferred to the Vinum Antimoniale of the P.D., as the addition of the wine causes a certain amount of circulatory stimulation which is better avoided, unless in delicate individuals or children with a weak, soft pulse. A powerful drug of this kind of course must be given with great caution and the patient kept under close

observation, the more so if a child. The inhalation of steam from a towel frequently wrung out of hot water and placed over the head for ten minutes before going to a warm bed, and a glass of hot milk and water (a good demulcent) sipped slowly will usually secure for the patient a good night free from a disturbing cough. The above treatment appears to be as efficient if not more so than the administration of some form of opiate which has the disadvantage of frequently upsetting the digestive organs. Cough arising from an acute pharyngitis is the one best treated by a linctus, but it is necessary to give the patient instructions to swallow the linctus slowly, so as to cover

as much of the throat surface as possible, and not to add any water to the medicine or take any food or drink for some time after. A good linctus which I have been in the habit of using consists of equal parts of *℞ Camph Co*, *℞ ymel Scillae* and *Syrupi Tolu*, giving $\mathfrak{z}i$ as a dose when the cough is troublesome.

Relief from cough both in acute and chronic pharyngitis can be got by the application of hot fomentations round the neck, well underneath the chin and up towards the ears, and often patients with an irritable cough from an inflammatory cause in the pharynx or larynx can get off to sleep after applying these for about ten minutes. Although gargles seldom reach much

beyond the fauces, relief can occasionally be got in these cases by gargling with water or some suitable mixture as hot as can be borne - these probably owe their effect to a tendency towards vascular depletion of the adjacent parts. Here again in sub-acute pharyngitis with a certain amount of accompanying laryngitis and the attendant cough and hoarseness, I have found Antimony given in doses of $\text{gr} \frac{1}{12}$ of great value.

Better results may be got by increasing the dose to $\text{gr} \frac{1}{8}$ if the pulse retains its tension after a smaller dose, but when this is done the drug must not be given over too long a period without the pulse being under observation. With doses like those mentioned above

I have never seen any bad symptoms develop except in the case of an old gentleman of 82 years who complained of a feeling of sickness after three doses of gr^{ss} every four hours, - this symptom passed off immediately the drug was stopped. Where the condition is associated with a tickling sensation in the throat which causes frequent fits of coughing, the Antimony in combination with Succus Corii (freshly prepared from a reliable source) and Emulsion of Iolu* is very effectual.

* Emulsion of Iolu which I have specially made for my own use is a modification of a substance of that name used many years ago by some old practitioners. The stock emulsion is made by mixing Pulv. Spagacanth. ʒij with boiling water ʒv in such a way as to avoid forming lumps. When this mixture is nearly cold ℞ Iolu ʒi is added and the whole thoroughly mixed.

The mixture ought to be taken in the same way as a linctus. The following would be approximately the adult mixture :-

℞ Antimon Tart grs
 Succ. Conii ℥ss
 Emuls. Tolu ℥i
 Aq ad ℥vj

Sig. ℥ss 4th h. p.

I am well aware that lozenges containing cocaine in combination with drugs such as Krameria or Menthol are efficient in stopping cough, but I rarely prescribe them knowing cocaine to be a very subtle stimulant narcotic and being aware of at least one case where the prescribing of these once, ultimately, by repetition on the part of the patient gave rise to the cocaine habit. Where there is a troublesome cough associated with granular pharyngitis

the actual cauterizing applied to the granulations seems to be the favourite method of treatment adopted by those who have much experience in that disease. I have found painting the posterior pharyngeal wall with carbolic acid in glycerine (1 in 10) to do very well where the main object was to temporarily relieve the cough. Where the cause of the inflammatory disturbance in the pharynx or larynx can be traced to some specific disease like syphilis or gout, general treatment for these affections ought to be begun at once and carried on while palliative measures for the cough (if that be necessary) are adopted. The addition of Emulsion of Tolu to

the specific mixture would probably be of service in these cases. A patient consulted me quite recently regarding a cough which had troubled her for about four months. It was of a hacking nature with no expectoration and continued the same day and night. Her lungs and chest appeared to be quite normal but there was slight congestion of the pharynx. She had tried many remedies but got no permanent relief. On enquiry I found a family history of rheumatism and she had occasional slight fleeting pains about the shoulders.

I ordered the following:-

R Potas Ricarb ʒij
Pulv Guaiac ʒij (Incolute)

℞ Belladonna ʒi

aq Menth Pip ad ʒij m

Sig ʒss 4^{to} 6^{to} horis ca aq

and after 24 hours the cough gave no further trouble. One must never forget the possibility of a foreign body in the larynx being the cause of a violent cough in children, & because sedative treatment might lead to serious consequences by stopping a necessary expulsive cough. Cases of this kind may go on to pneumonia if the cough is not properly managed, or the foreign body expelled or removed by some other means. It follows that in children one must be careful to get a clear history of the cough in suspicious cases. In doubtful palpation of the parts may be necessary. After removal of a body from the larynx, cough should be encouraged

so as to expel any fragment which may have been left behind and all the exudation set up by the irritation. In the treatment of whooping cough I have found nothing better in the majority of cases than a combination of Chloral grij and ℞ Belladonna ℥iij for a child of 2 or 3 years. I have been in the habit of giving this mixture to the nurse or mother with the usual instructions regarding coughs and telling her to give a dose every four hours only when the cough and whoop are very severe. In this way the effect of the drugs is allowed to pass off and the child clears the respiratory passages with the following paroxysm. This

I believe lessens the tendency to complications such as broncho pneumonia etc. Many children derive comfort from the use of a carbolic vaporiser kept burning continually in the sick room.

The treatment in ordinary cases of 'croupy cough' in children is effectually carried out by Antimony in doses of from gr $\frac{1}{40}$ to gr $\frac{1}{20}$ following the rule that the weaker the pulse the smaller the dose, but it must also be remembered here that Antimony is a 'sharp edged tool' and consequently must be used as such. One dose of the drug after the child is in bed will usually make it comfortable. I tell the nurse in this disease as in many other childrens diseases to

Keep the child close against her until it sleeps. By doing so a soothing influence seizes the little one, and that, with the natural heat imparted from the older person's body, is conducive to the comfort which is followed by sleep. One must be careful to avoid stopping a cough in diphtheria so that expulsion of loose parts of membrane may take place, which otherwise might lead to serious results. The same applies in paralysis of the larynx or part of it, to prevent fluids or other bodies from entering the lower air passages, and it may be necessary in these cases to give nerving and other stimulants to increase the expulsive effort. The treatment of

cough in acute diseases of the larynx mostly falls under the treatment of the diseases themselves, but in all cases the inhalation of a moist heated atmosphere from an arrangement such as the bronchitis Kettle or a steaming surface tends to lessen the severity and number of the paroxysms and at the same time does not interfere with the expulsive effort.

One disadvantage of the use of opiates is that, although checking the cough and decreasing the amount of exudation, they do not aid in the expulsion and so in this way defeat nature's attempt to expel the irritant. The cough in chronic diseases of the larynx which are curable requires a warm,

moist, and equable climate for its alleviation which, apart from the curative effect, will replace as far as possible the conditions above mentioned over a long period. When the cough in tubercular laryngitis is severe enough to demand some treatment, the use of an insufflation of morphia acetate gr $\frac{1}{4}$ and starch gr $\frac{1}{2}$ gives relief without causing any such bad effect as might follow the use of morphia internally. Benign laryngeal tumours can usually be removed where upon nature's efforts at removal will cease. Coughs from malignant growths in this region will only be checked by the administration of some form of opium, but when

ulceration takes place, this must be combined with Nuc Domica or some drug with a like action to aid in the expulsion of the purulent matter which otherwise would cause mischief in the lungs.

Antimony again is very useful in checking cough as well as assisting the cure in the dry stage of a tracheitis or bronchitis. By a careful administration of this drug, I have found better results than with any other, and last year when the so-called 'influenzal cold' was attacking (at any rate in this part of the country) the respiratory passages mainly, I found it of great service. It may be given as before stated, in doses

of gr $\frac{1}{12}$ of the tartrate every four hours until free expectoration is established. When this has been done it ought to be replaced if necessary by some stimulating expectorant, but I have often found that after treatment by Antimony the expectoration was so free and the cough so easy that no further drug was necessary. If the cough did still cause some loss of sleep a pill containing Pulv Specae Co. gr $\frac{1}{12}$ and Ext. Conii gr $\frac{1}{12}$ taken when the patient woke up coughing had the desired effect. I recently saw a patient who had had an acute attack of bronchitis which left her with a severe irritating cough, which only resulted in the expulsion of a small quantity of sticky mucus.

She had tried several remedies, but these were of no permanent avail.

On seeing her I noticed some thickening at one or two of the finger joints, and although she had no history of either gout or rheumatism I prescribed a mixture containing Potas Bicarb and Vinum Colchici with the result that the cough vanished about a week afterwards. In this case the treatment expelled the poison by the bowels, kidneys and skin instead of by the more difficult and painful route through the upper respiratory tract.

In chronic bronchitis the cough may not require any treatment, if only a few fits of coughing take place in the 24 hours, with easy expectoration.

and little or no disturbance of sleep. It is in this disease there is great demand for a warm, moist, and equable climate, and with that alone the chronic bronchitic may be spared the use of drugs altogether. A cold morning bath acts as a good stimulating expectorant* and by its effect cough may not be necessary for the greater part of the day. I have used *M. Renouin Cozi* and *Cocymel Scillae* $\mathfrak{z}\mathfrak{ss}$ \mathfrak{q} \mathfrak{ad} $\mathfrak{z}\mathfrak{ss}$ every four hours and some chronic bronchitics after taking a course of this mixture can get along in comfort for months. As before mentioned I placed several old people with chronic bronchitis on open air treatment as far as possible

* D^r Smith, London. Post Graduate Lectures 1904.

at home. At the end of three weeks there was a marked improvement in their general condition, the cough was less, due probably to the more efficient action of the expulsive muscles and the gradual changes of temperature, but they also had a feeling of well being which, before the treatment was begun, they had never experienced. They were apparently able to assimilate more food, which is an important factor in dealing with chronic bronchitis. Although I had great difficulty at first in getting them to adopt the treatment and making them understand that they must keep warm by wearing sufficient clothing etc the trouble taken was well repaid by its results. One drawback to putting old people

entirely in the open air is that the pulse frequently becomes one of too high tension. To obviate any mischief from this I am in the habit of ordering them to keep the bowels free with a small dose of Epsom's salts in the morning when necessary. Several of these patients say they feel much better when taking this aperient, and I believe in such cases it makes the open air treatment a comparatively safe remedy. Another remedy for lessening the cough in Chronic bronchitis is the hypodermic injection of a solution of Cinnamate of soda in glycerine. This solution must be prepared* so as to avoid the precipitation of the salt. A specially

*Preparation - Lancet, July 12th 1902.

strong syringe with a wide bored needle is required, and the injections seem to be more efficient when given in some fleshy part of the chest wall - counter irritation probably plays a part in the treatment. The injections, six or eight of which give the full action of the drug, are given about once a week, as the temporary leucocytosis produced has usually disappeared by that time. The pain caused by the prick of so large a needle can be dealt with in the usual ways of avoiding pain in giving hypodermic injections and that caused by the drug passes off in a few hours and is never so great as to be any

Serious inconvenience. Mxx of the solution is sufficient for the first injection, but Mxxx may be given at the second and following injections.

I have not seen any gain by increasing the dose further than this and consequently the amount of pain which an increase in the dose causes, is not justifiable. With these injections the cough is diminished in frequency and severity, the exudation being much less and requiring so much less expulsion. But besides this, patients who have lost much flesh gain in weight and improve in general condition, so that after eight weeks of treatment, they are as a rule able to get along

comfortably, and if at any time they relapse into their former condition the treatment can be repeated without any ill effect. Open air treatment can be combined with injections of cinchamate of soda, but the results are not better than those in which only one treatment has been carried out, and of the two, I think the open air treatment is preferable, as the patient may carry it on continually, and is not disturbed by the pain etc of hypodermic injections. In foetid bronchitis the open air treatment would be beneficial from a point of view of cough but the odour from the patient's breath is also more diluted, so making

it pleasanter, not only for the patient, but also for the friends around him. I have seen only one patient who expectorated a good bronchial cast. He was undergoing at the time the open air treatment for phthisis in the form of bronchial catarrh, and the amount of coughing to expel this was not considered by him to be unusual in his case, so that I presume in some cases where a cast is lying loose, no treatment is required for its expulsion. Where casts or pieces of dead tissue are known to occupy the bronchi, I would prescribe, if necessary, Iodide of Potassium with some stimulant expectorant.

In the treatment of cough accompanying bronchiectasis, one must, if possible, find by careful examination, the exact nature and situation of the dilatation. Having found this, instructions ought to be given to the patient to place himself in the most convenient position for emptying the collection of matter once or twice daily. If this be done, the coughing will be much less and, what is necessary, will be applied to the best advantage in the expulsive efforts. When an exact diagnosis of the nature of the bronchiectasis cannot be made the patient can be instructed to find, by experiment, the best position in

which to cough. The expulsive cough after an attack of asthma rarely requires any special treatment, but if it should, antimony again, will be found of value. A case is reported in the British Medical Journal of last year where an unconscious swallowing of a tooth after extraction caused a most intractable cough. The cause being unknown, remedies were tried to alleviate the cough, but without permanent good, until a natural cure took place by abscess formation round the tooth, and, later on, expulsion by a violent fit of coughing. The only treatment in this case would have been to preserve

the general health. The cough in pulmonary emphysema is almost always the result of a coexisting bronchitis; and must, if necessary, be treated accordingly, but as heart disease is common in these cases, antimonial treatment is dangerous, and open air treatment is unsuitable owing to the vascular changes brought about by the extremes of temperature. Apart from a chance of creating the habit a good remedy is the administration of whisky either alone, or in the form of 'toddy'; and this if taken at bedtime in reasonable quantity will relieve the cough, and secure rest for the patient.

Coughing during the day is better left untreated where it is not causing undue annoyance. The cough during recovery from a pneumonia where the exudation has not undergone absorption is often very troublesome, and the sooner the exudation is got rid of the sooner will the cough cease. Sedatives in these cases only prolong the trouble, but drugs such as Iodide of Potassium gr v for an adult in combination with some expectorant, for example, Syrup of Tolu gr ss as an adult dose, will be found to make the expulsion easier and consequently the coughing less severe.

Quinine and other tonics are of use after the troublesome stage of coughing is past. One thing in favour of the ice bag treatment of pneumonia in children is that the cough during the period of application is not so frequent, and judging from the observation of a few cases the action of the ice bags is superior to hot poultices in the alleviation of this symptom. The cough although less frequent is not altered in character or effect. The cough in gangrene and malignant disease of the lung can only be treated, where necessary, on general principles already laid down and the use of opiates.

Frequently, when Cough is troublesome in Phthisis pulmonalis, some form of opiate is prescribed which certainly checks the cough; but the use of such drugs, besides being steps towards establishing a narcomania, often upset the digestion and consequently by their prolonged use are detrimental to the patients general condition. In view of this opiates ought only to be given when other less harmful drugs have been tried and failed, or in hopeless cases.

The character of the cough as well as its period of greatest severity must be considered, as it may only require treatment at certain times for instance

during the night. If it be brought on by a tickling sensation in the throat and is accompanied by little or no expectoration, an occasional dose of a sedative such as Bromide of Potash may be all that is required. When a severe fit of Coughing is followed by only a scanty tough expectoration, then a drug which liquifies the sputum is necessary - in Squills we have a remedy for this, with Nux Vomica in addition to increase the expulsive power. In this case cough with expectoration must not be stopped, in fact, the object in the treatment would be to get rid of the exudation in the most comfortable way.

The morning cough in this disease may be assisted by a tepid sponging of the body followed by a brisk rubbing with a rough towel, by drinking a cup of hot fluid, or by drugs of which a suitable one is Carbouate of Ammonia (gr ν for an adult) given in Syrup or an emulsion about an hour before rising. If on the other hand, the exudation on the respiratory surface of the lungs, or in the bronchial tubes, is sufficiently fluid, is easily expectorated and does not cause much coughing in the night, no treatment is necessary. Should coughing take place only in the night and cause disturbance of sleep, then a remedy may take the form

of a pill which is handier to use during the hours of sleep. The pill consisting of Pulv Specec Co grips and Ext Consi grips may be given, one to be taken every four hours, when necessary, during the night, or when the patient wakes coughing. In the open air treatment of phthisis pulmonalis the cough is lessened for reasons already mentioned quite apart from the effect on the disease itself. The treatment of phthisis pulmonalis by hypodermic injections of Cinamate of Soda has also a marked influence in lessening the cough. It appears to do so by checking the amount of exudation. The injections may be given in the same way as described in the

treatment of Cough in chronic bronchitis, and after even one injection patients say their cough is not so troublesome. In advanced cases of phthisis I have found the treatment for Cough suggested by G. Smith of the London Hospital, namely, Potas Iodid grvij and Syrupi Tolu ʒss thrice daily in water, to be a great help in promoting easy expectoration and so making cough less painful and troublesome. The cough in pleurisy, if there be any which demands treatment, is usually checked by the treatment of the pleurisy itself, and in pleurisy with effusion, hydrothorax and pneumothorax this symptom rarely requires special treatment.

Inhalation of Gases.

Under this heading only general treatment will be necessary if the patient be removed to a pure atmos-
phere.

Reflex Irritation

Skin Surface. In persons predisposed to coughing the necessity for wearing a proper amount of suitable clothing is emphasised by the fact that cough may be set up by moving from one temperature to another apart from the action on the respiratory surface. It is common to find a cough set up by a person undressing which consequently should only be done in a warmed room.

Ear It is also a well known fact that wax in the ear, or inflammation in the meatus or middle ear, may cause coughing, the cure depending on the removal of the irritation.

The cough associated with dentition in infants can be relieved by small doses of Potassium or Ammonium Bromide, the choice between the two drugs being decided by the condition of the pulse.

Abdomen Cough with a coated tongue and foul breath, (the so called 'stomach cough') is treated, not by prescribing remedies which act on the respiratory mucous membrane, but by those

acting on the digestive tract or by a combination of both sets of remedies. A mixture containing Rhubarb + Soda or Bicarbonate of Potash has a far more curative effect in these cases than the exhibition of expectorants alone. A gentle aperient such as a dose of calomel at bedtime, or a Plummer's pill on two successive nights, may aid greatly towards remedying the catarrhal condition of the tract, and so cure the cough. The diet must also be of a light nourishing character. The so called 'Liver Cough' may also be treated in the above way. I once relieved

a cough in a young lady of about 20 by the administration of Dismuth Salicylate in gr^x doses thrice daily. She had had a cough for six years and no other drug which she had taken gave her so much relief, but the disappointing feature of her case was that the cough became as bad as ever when the Dismuth was stopped. The treatment of Constipation will sometimes cure a cough where no other cause can be found, and in treating children this should always be kept in mind as by the carelessness or ignorance of some nurses and parents this cause may be overlooked. Worms in children

must also be enquired after, and if found and treated, an otherwise unexplained cough may disappear.

The cough of puberty where medicinal treatment is advisable calls for the administration of ~~Drugs~~ sedatives. A reflex cough (Lancet 1889) caused by an adherent prepuce was almost immediately cured by circumcision, and the evacuation of an abscess of the kidney give a like result (British Medical Journal 1904)

Central Irritation

Emotion may be the exciting cause of a cough more especially in nervous women and children, and of

have known cases where tears were nearly always accompanied by a fit of coughing.

Habit of coughing is found in some people in church. These individuals hardly ever cough elsewhere, and certainly a slight effort on their part would be an effectual remedy.

The treatment of hysterical cough falls under the treatment of the disease itself. I have never known a case of coughing due to a tumour of the brain, but apart from a radical cure, if that were possible, treatment would consist in giving efficient sedatives.