Thesis for Degree of M.D.
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"Eucalyptol vapour in Diphtheria"
Thesis for the Degree of Doctor of Medicine

"Eucalyptol Vapour in Diphtheria."

It is asserted that every Syneconologist of
eminence has devised a new remedy; and it is probably equally true that every
Laryngologist has advocated some new treatment for Diphtheria.

At least, on consulting that valuable work, Reade's Medical Digest, one is
staggered, both by the numberless references in connection with that
terrible disease, and by the long list of drugs, each of which, the original
advocate seems prepared to assert, is to supersede all its predecessors.

Yet in turn all, or nearly all, have fallen
into disuse or oblivion; therefore, in
venturing to bring under notice a fresh
mode of treatment, none but a very
sanguine man can avoid forebodings,
that his new procedure must speedily
share the same fate.

Moreover, for a young practitioner to
make this attempt is doubly hazardous,
first because his seniors will be liable

doubt his diagnosis, secondly, because, when new drugs appear to succeed where others have failed, there is always the open question whether the disease did not spontaneously subside by mere lapse of time.

Let me therefore hasten to set myself right on both these points.

With regard to Diagnosis, I have been led to the opinion that any inflammation of the throat, involving the presence of a false membrane or parts visible to the unaided eye, is Diphtheritic in nature: I exclude, of course, cases of Tonsillitis in which one or many follicles become blocked, while caseous masses which do not tend to spread or coalesce. At the same time, I have refrained, in this paper, from quoting any but the most unmistakable cases, though before doing I have materially sifted my average of successful ones.

With regard to the second doubt, I may say, that I recognize that the diphtheritic membrane tends to disappear spontaneously
in 13 or 14 days. And I have satisfied myself, I hope to prove shortly, that the duration of the disease is remarkably shortened by the method of treatment which I have practised. This is not the case with a considerable number of the methods to which I have referred through the medium of Price's Diphtheria, or in my own use of the hitherto accepted, or advocated, modes of treatment, I have omitted many, because in my opinion the evidence of the disease being cut short was insufficient.

Nor have I forgotten how remarkably the malignancy of Diphtheria varies. The epidemic may be trivial, the next terribly fatal, but the difference in the severity of cases in one at the same epidemic is still more noticeable. Half of one household may die, while a few doors off there may be cases, which, but for the known existence of Diphtheria, might never have come under medical notice.

Here, in Tottenham, the disease is very common. I have seen, in 2 years, nearly 50 cases of membranous sore throat, t
have lost several; while I have twice heard of 3 deaths in one house, the Parish Medical Officer has pointed out some a locality where all the houses in the row were affected. I consider therefore that I may claim to possess a fairly adequate experience of the malady.

Dr. Howell Mackenzie, in his monograph, "Diphtheria, its nature - Treatment" gives a table (page 70) of the ages at which the disease is most common; by which it appears that, of every 1000 fatal cases, the age of 810 is from 1 to 10 years. Now the plan of treatment to which I have wish to call attention possesses this especial advantage, that it is of easy application in the case of children, who are the chief sufferers from Diphtheria, and, who, when attacked by the said disease, often resist remedies to such an extent as to render persistence in them almost as dangerous as the malady itself.

So far as Peale's Medical Digest is a guide, the most successful drugs employed internally in the treatment of
This complaint are the following:

1. Cyanide of Mercury. With this drug, Dr. Anschutz of Leipzig (Berliner Klinische Wochenschrift, No. 20, for 1830) who had found that Chlorate of Potash, Salicylic Acid, Benzole of Soda, Inhalations of Lime Water, & Lactic Acid, all useless, cured 106 out of 120 cases, giving 2 grain doses to adults; but he also employed a spray of Benzole of Soda.

2. Carbolic Acid. Mr. F. A. McEwen in the Practitioner, Vol. 7 for 1878, Page 515, gives 4 cases of very rapid recovery from what may be fairly held to have been incipient Diphtheria. He gave 1 minims doses, & steam inhalations.

3. Pilocarpine. Dr. Guttman, of Crounstadt in Silesia, in October 1880, (reported in the Lancet for 1881, Vol. II, page 962) began its use with very remarkable results; but Dr. Jacobi (Medical Times & Gazette, 1881, Vol. III, page 92) failed in every case, & says, "It seems to hasten the result," i.e. death! Reimnitzer (Lancet, loc. cit.) had 6 cases of "dangerous pulse," & half the children died. Mr. Ricot
Stated, that, of 129 recorded cases, 47 had died; while Archembaud lost every severe case. This discrepancy is truly remarkable, I am unable to find any attempt at reconciliation!

1. Salicylic Acid. Braithwaite's Practice vol ii for 1879, pax 7516 quotes Mr. Rowell, who states that under its use he has had 'not one fatal case in Diphtheria,' 

    'Unvarying success in Scarlet Fever.'

    His formula was:— Rx Acid: Salicyl: :31.31
    Mvitq: Thyma.: 31
    Tinct. Aurant: : 31
    Syrup. Tinct.: : 31
    Aquae: : 31
    Sig: : 36 bine dors.

This was given alternately with Tincture of Iron.

Dr. R. C. Barker is quoted from the Glasgow Medical Journal of April 1879, p. 333. He found it 'very prophylactic.'

And Dr. W. Squire (British Medical Journal April 26th, 1879 p. 673) found it very useful internally & as a spray. But says "This

    'contraindicated, where there is Reuol.
"congestion, as most of the acid is excreted "by the kidneys". And it is well known how commonly albuminuria follows an attack of Diphtheria.

5. Bzoate of Soda. This was used in the Darmstadt epidemic in which the Princess Alice lost her life; but Letzerich (Berlin Klinische Wochenschrift No 7 for 1879), reports 26 recoveries out of 27 cases, - 5 adults, 21 children - under its use; & Hoffmann (Liber cii. 300, for 1879), reports 12 cases all recoveries - 4 adults, 8 children.

6. Boracic Acid. Dr. S. A. Atkinson in the Practitioner for 1880, vol I p. 705, quotes Dr. Conner & Ward & Malcolm Simpson: - "By the use of the acid the disease was "shortened, & other members of the family "protected from infection. Dose 5 to 15 grains. "1/2 l. of water takes up 10 grains."

Besides the above all the now commonly employed Tincture of Iron, Chlorate of Potash, & Chlorine Solution, I find Oil of Turpentine credited, with rapid recoveries in 73 cases of children of from 7 to 12 years,
(Dr Bosse, Berlin Klinische Wochenschrift, No 43 for 1880); but these results are of less value than they appear to be, as he gave also Chlorate of Potash in Linenwater, Balsam of Peru, & also used this latter locally.

Oil of Eucalyptus has been given by Dr Hallowes, & will be adverted to later on.

Local Treatment. The list of remedies thus applied is formidable in length. Every germicide drug known has been pressed into service, & listed confidently only to be ignored by the next writer. I will mention a few only.

1. Iodine. Dr Prangley (British Medical Journal, Jan 9th 1875, p. 40) applied a Tincture of 1/8 grains to the ounce at least once daily. "In general half a dozen applications were all that were required, if the membrane were in spots or shreds. In several, two applications were sufficient." Iodine inhalations were also employed, ranging from m/8 to zj of the common Tincture to the pint of boiling water. But of this Dr Prangley
Remarks, "It was apt to cause cough."

2. Carbolic Acid. Mr. Sedgwick (Medical Times & Gazette 1867 vol.5 p.216) gave it as a gargle to adults, but applied it locally to children. "No early cases were lost,
Mr. Wright (Saucelet 1876 vol.72 p.40) points to 1 to 6 of Carbolic Acid, 1 Glycerine, and "only lost one case in 12 months."

Dr. Shelfe (Medical Times & Gazette 1880 vol.III p.30) confirms the statements of Dr. toasted as to the benefits of Camphor, Carbolic Acid & Alcohol. His formula was 9 grammes of the Acid, 25 of Camphor, 9 of Alcohol & 35 of oil. He says "Children soon get reconciled? I can only reply, "A fortunate mixture, ma "si bona noda!" There are many other records in favour of this drug.

3. Chloral. - has the voucher of Rokitansky for its efficacy (London Medical Record 1878 p.527). using he used a 5% per cent solution every half hour. I have used it unsuccessfully myself, I regard it as dangerous for young children, unless applied by the
medical attendant himself.

4. Hypochlorite of Soda. Among others Dr. Hayden (London Medical Record, vol II for 1866, p. 22) gives a series of successful cases.

5. Sulphurous Acid has the support of the late Dr. Carpenter, and Dr. G. Johnson among many others, but its detractors are also numerous.

6. Tobe. Dr. Iswell Mackenzie, at page 71 of his work, advocates an aqueous solution, 1 in 5, to be applied as a varnish previously drying the affected parts with blotting paper. I am positive that, of all the young patients I have had, not more than two, or perhaps three, would have submitted to this, or one would think it must be dangerous to the operator.

Various other methods of treatment have been advocated with some show of success; I will not however dwell on them, for the time given is sufficiently long to make us fear, either that a specific for Diphtheria has not yet been discovered, or that its application is so much at
fault as to render the evidence in its favour uncertain and contradictory.
Let us consider what we should aim at in the treatment of Diphtheria.
The disease is of an aesthetic type. It tends to the formation of a false membrane, which may cause suffocation; or death may be the result of bloodpoisoning induced by the disease. Both in regard to the membrane and the bloodpoisoning, we have practically to do battle with a bacteroid growth, its products. It is clear, then, that our duty is of the simplest—namely to support the strength, to devitalise the membrane, and to counteract the bloodpoisoning. These being the indications, we must either avoid such germicides as are antagonistic to the higher, and as to the lower forms of life, or employ them with caution, locally only.

Since I have investigated the subject with the view of writing this thesis, I am disposed to consider that, apart from the likes and dislikes of the patient, the best internal treatment for affection...
is either Tincture of Iron with Glycerine & Chlorate of Potash, or Boracic acid: whilst locally, Carbolic acid, alone or in combination, seems to me a more trustworthy remedy than any other drug I have mentioned.

But for local use in all cases, especially in those of children, I hold that Eucalyptol should rank first on the list of therapeutic agents.

As an internal remedy I object to it, on account of its nauseous taste, its liability to irritate the stomach, it is one of the series of volatile oils which have a depressing effect on the heart. Inhaled from a Steam Oleomizer, the most timid child will tolerate it; & with a little patience, I have succeeded, in most cases, in applying it as a spray to the throat. In this way it is very effective.

I generally prescribe it as follows:

1. Three drops of the oil are to be put into the Bronchitis Bottle every 15 minutes, the supposed conducted under a tent in which the patient lies. Thus, whether
asleep or awake, the patient inhales an antiseptic atmosphere. While awake, or if not confined to bed, the patient must be encouraged to hold his face in the steam.

2. A little of the oil may be sprayed on to the pillow, & a handkerchief laid thereon.

3. For the more tractable a proper thing spray apparatus is used, twice daily for a minute or two. Hitherto my formula has been 10 minims of Eucalyptol dissolved in 1 ounce of Rectified Spirit & 1 ounce of water added; but I am of opinion that a 10 per cent solution of the oil in Methylated Spirit is quite applicable, & I intend to try it in the next suitable case.

4. Internally I have usually given Tablets of Iron with Chlorate of Potash & Tincture Boracic Acid however seems worthy of a future trial.

First used in Malaria, Eucalyptus soon gained a reputation in Bronchial affections; & Mons. Bucquoi (Medical Times & Gazette, 1875, vol 2, p. 255) says it
surpassed all other balsams in Gangrene of the Lungs.

Mr. Bess Boll (Braithwaite's Report 1878 vol. I p. 329) has employed it for bronchial, vesical, & uterine catarrhs, & recommends it for cases suggesting Gastric Ulcer.

Passing over a goodly series of annotations attesting its efficacy in the abovementioned disorders, I first find mention of the use of Eucalyptus in any form for Diphtheria in the year 1879. Dr. Wrooler (Berlin Klinische Wochenschrift May 26th of that year) gives the following account:—A girl aged 20 was suffering from a severe attack of Diphtheria. Both Tonsils, the Vulva, & the arches of the Palate were covered with a thick whitish membrane. There were also a few ulcerations of irregular form, & with ragged edges. Dr. Wrooler mixed 10 grammes of Eucalyptol with the same amount of Spirits of Wine, & of this compound he added 10 minims to water (hot), & ordered inhalations of 20 minutes duration every hour.
At the same time the patient took two half minims of mixture of Iron every half hour. For three days the patient remained in the same state with high fever. On the fourth day she was worse. One draught of the mixture was then used with the water at the inhalation maintained at night. The next day the temperature was falling. The membranes were partly expectorated.

She was three weeks in Hospital.

Dr Murray Gibbes in 1883 (Lancet vol. III 1883, p. 363) has an important paper on the subject. "The atmosphere the patient breathes must be saturated with Eucalyptus. He met with "no secondary symptoms, such as Paralysis, in any case". He gives an abstract of 37 cases successfully treated.

Mr C. H. Willey (Lancet 1883, vol. II, p. 749) writes "I have applied this in a number of cases of severe Scarletina, & Diphtheritic sore throat, & in cases of pharyngeal sore throat, & in Tonsillitis occurring early in Enteric Fever, mostly in young subjects who cannot gargle or who will not use the throat spray."
"The antiseptic was Eucalyptol. This was vapourised by a croup kettle, 3 oz of the oil being placed in the kettle with the water, I used for 3 hours at a time twice daily. It has given good results in removing fetor & local discomfort."

There are the only records I have been able to find of its use in Diphtheria except those contained in Dr Hallmei's Graduation Thesis of last year, to which I shall allude presently.

In the Practitioner for 1885, vol 1, p.349, is a note by Dr Kesteven of Bristol in which he says "It (Eucalyptol) reduces the force & frequency of the pulse. It lowers temperature permanently."

In connection with this Dr C. Roberts (British Medical Journal 1881 vol 1 p.963) states that doses of 20 to 30 minims produce irregularity of the heart, & prostration. He used a mixture of the fresh leaves.

Fargherston, in his "Guide to Therapeutics" 2nd edition p.341, says, "It paralyses the spinal cord & medulla, & death results
from respiratory failure. The pulse loses in force, the temperature is lowered.

A strong case seems to have been made out in favour of the inhalation of from 10 to 60 drops of equal parts of the oil of rectified spirit in Diphtheria.

Farret in his work on Materia Medica, 8th edition p. 257 says of Eucalyptol, "It has a very decided antipyretic influence on the septic fever produced artificially in dogs by the injection of putridage into their veins. In my notes from Professor Fraser's lectures in 1882, I find the following:

"Internally it caused a hot taste, & warmth in the stomach. Aloine defecations increased. In large quantity pain & eructation. In very large doses motor weakness, respiration enfeebled, heart slowed, blood pressure diminished, & death by asphyxia. But this requires 80 minims. The paralysis, as in the case of other volatile oils, is due to its direct action on the cord. May be used in Dyspepsia, especially where associated with Sarcinae. Very serviceable in cataract of the Bronchial
"Mucous Membrane. Has also been employed for both Bronchitic & nervous asthma. In this respect its effect on peripheral nerve terminations should be noted."

Finally I have to note the Graduation Thesis of Dr H. P. Hallowes, of Lancaster, presented in 1875, "On the treatment of Diphtheria by the internal administration of Eucalyptus Globulus."

He has used it in 13 cases, & in all with excellent results. All those taking it "expired freely," the urine smelt strongly of Eucalyptol. He observed "a tendency to vomiting, headache," in some cases.

From an article in Lennox's Cyclopaedia vol ii, p. 609, by Kertz, he quotes the important statement that, according to Mees, Eucalyptol prevents the transmigration of white blood corpuscles in inflammation, just as occurs under the use of Quinine. The importance of this observation in relation to the formation of a false membrane is obvious, as Dr Hallowes remarks."
"It must naturally help to keep the inflammatory process from spreading, to prevent the surrounding tissues from being impaired." This statement of Messrs. specially refers, says Dr. Hallows, to the local application of Eucalyptol. Dr. Hallows proceeds to refer to the value of its elimination by the mucous membranes (quoting Bartholomew as his authority), to the resulting local germicide action during elimination. It confirms the statement of Dr. Murray Gibbes that no sequelae such as paralysis occurred, but his explanation of this immunity I am not prepared to accept. He says "We employ a remedy which will prevent the separation & disintegration of the blood constituents, as well as the entry of septic matter into the blood." Now it is well known that paralysis does occur after cases so mild that its advent has been requisite to confirm the diagnosis of Diphtheria. This happened in the first case I ever attended.
I was not then prepared to regard every patch of membrane as diphtheritic, but in this particular instance there was but little membrane, whilst the other symptoms were very trivial. Yet a few weeks later paralysis of the Delatn Palati of both lower limbs supervened.

I prefer to attribute the preventive efficacy of Eucalyptol, if it really possesses such a power, to its well ascertained effect on the Spinal Cord & nerve terminations. It is true that paralysis of the cord can be caused by Eucalyptol, but Farquharson (librists) states that there is a previous stage of excitement; & I submit that the determination of this drug to the nerve tissues prevents the Diphtheritic poison, germ, or germ product from injuring them, just as its undoubted elimination by the mucous membranes enables it to attack the disease germs in the throat. It thus plays the part of a true antidote by attacking the poison in its special seats.
On the whole, I am disposed to think that, if taken in time, cases are better treated by the local, than by the internal, use of Eucalyptus; the disease being asthmatic, of the drug both depressing to the heart, apt to cause derangement of the stomach. It is probable, however, that the internal administration, especially where time has been lost, will best affect any form of paralysis.

I will now proceed to detail the cases of unmistakable Diptheria in which I have employed Eucalyptus.

In 1846, (I had not then entered the medical profession,) I heard of the drug in the following manner:

Beatrice J. aged 14. Liable to Bronchitic Asthma. Mother has chronic Asthma & Hayfever. On the 3rd day of an attack of Bronchitic Asthma, this girl became seriously ill. My mother, who was nursing her, speaks of “frightful spasms, each breath causing severe pain.” Some form of inhalation was prescribed, but the spasms became worse, till the patient...
could only speak gaspingly, it seemed to be in extremis. Her relations were telegraphed for. Mr. Ward had read somewhere of the use of Eucalyptus Globulus in Asthma. A few leaves were gathered from a plant which happened to be in the greenhouse; they were bruised, boiling water was poured over them, & the vessel containing the infusion held to the patient's face.
In two minutes the spasm abated. In a quarter of an hour she was sleeping tranquilly. Next morning there remained merely the bronchitis to treat.

Case I. William & Arthur J. aged 8 & 6 years respectively. On 13th November 1884, the elder child had a well-marked attack of Diphtheria. The younger one was sickening. I prescribed. Iron & Glycerine locally & internally, & steam inhalations.
On the 18th William died, suffocated. I had urged the performance of Tracheotomy, but it was declined by the parents. On the 30th Arthur J. was in a similar state to that of his brother on the 17th, the day before his death. I recollected the
The case of Beatrice S., as the case appeared, desperate, had recourse to Eucalyptol, adding about 10 minims every hour to the Bronchitis bottle full of boiling water. Almost immediately the symptoms abated, and the patient convalesced steadily. On Dec 1st there was paralysis of the soft palate, which had not quite passed off under Easton's Syrup, when the family left the neighbourhood on Dec 10th.

Case II. Whilst attending the previous case I was called to see a boy, aged 7, Simon A. I found, neck 27", patches on each tonsil. On this, the following day I managed to paint the throat with Iron & Syr. But on my third visit the patient's opposition to the application of the remedy was so great, that I was obliged to desist from my attempts. I therefore ordered Eucalyptol inhalations, which the boy seemed quite to enjoy, whilst utterly refusing to take medicine internally.

November 30th. Having now no trust to fear, my patient opened his mouth widely.
found no trace of the membrane left, though considerable hyperaemia remained. This sudden disappearance made me dubious of my diagnosis, but I thought it best that he should be watched and kept apart from the rest of the household.

December 17th. Fresh patches were discovered. I was again sent for and recommended inhaling, but this time 7 days elapsed before the throat was clear. On the 9th Jan. 1885 he complained that he "saw double." I prescribed 50 grain doses of strychnine in granules, & he recovered in about a month. There was no albumen in the urine at any time. In the 1st case I did not test for it. In this house there were 3 other children, 4 adult persons, none of whom suffered.

Case III. Margaret S. aged 5½ years, the most delicate of the children. In Sept. 1885 she had a large patch on the left tonsil, a smaller one on the right. Rigor & vomiting had occurred. The temperature 103. I gave 3 grain doses of citrate of iron & quinine, strychnine & iron locally, & eucalyptol inhalations. But
here again I was met by most stubborn resistance to treatment, & even the inhalations were not properly managed. With patience I succeeded in inducing the child to submit to a weak spray for the throat 7 percent of eucalyptol in rectified spirit & rosinwater, & though, up to this time, (8 P.M. on the 10th) the patches had increased, the next morning they had melted away of in 24 hours more all trace had vanished. There was no albuminuria, or there were no sequelae.

On the 20th October the developed lachrymation of the next day a false membrane covered both tonsils. Under the spray the throat became clear in two days. In the course of this illness there was abundant albumen in the urine.

On neither occasion did the three other children in the house suffer.

Case IV. Montague Ri: aged 4.

Oct 23rd 1885. On this, the second day of the illness, there were two small doubtful spots on the right tonsil.

26th The throat was involved, & the two
spots had united to form a patch.
Eucalyptol inhalations now ordered.
26th. Epistaxis. Left tonsil also attacked.
Patient very intractable, a thoroughly spoiled child, & the mother quite incapable of managing him. He would not even allow the nozzle of the kettle inside the bed tent.
27th. Larynx affected.
28th. Bad croupy cough, & towards night dyspnœa supervened. At 11 P.M. I performed Tracheotomy. The respirations at once dropped to 16 per minute, & the patient speedily fell asleep. At 2 A.M. took food well, & went off to sleep again.
2.40 A.M. sprang up in bed & fell back dead. Albuminuria well marked.
Neither the mother who, in spite of warnings, would persist in fondling the child, nor any other inmate of the house suffered. A brother who had slight patches but was a more tractable patient & inhaled thoroughly got well in two days.
Case II. George Harry. Aged 28.
Liable to Croup as a child. Ill from Oct. 26th to Oct. 31st 1885. Treated for Tonsilitis. At night I saw him and found the throat very oedematous, & together with the enlarged tonsils, completely obstructing the view of the Pharynx. No false membrane visible. Incised the left tonsil & the uvula, but no pus came.
Note 1. Membrane covered the entire visible surface of the throat.
Note 2. Eucalyptol inhalations ordered, & on the following day, in addition, the spray was used as in Case III.
Note 3. The only trace of membrane was on my incisions.
Recovery was rather slow. There was no albumen at any time.

Case II. The same patient as in Case II. Oct. 23rd 1885. Right tonsil inflamed, & enlarged, but no false membrane. Head much drawn over to the right.
Oct. 27th. Large patch on right tonsil. Inhalations begun.
30th. Insigins of the scratch, though the tonsil was as large as before, remained so for some days. No albuminuria.

Case VII. Ellen H.: Aged 15. Constantly under medical treatment. Strumous. At 9.30 am on 5th Dec. 1883, she came in from the back of the house, and complained of a "dreadful smell" from the adjoining premises. Very soon an old cicatrix on her left arm began to cause pain, which spread up to the neck.

At 11 a.m. the glands on that side of the neck were swollen. She vomited repeatedly. The swelling spread round under the chin to the other side. The glands were worse. At midnight on Dec. 7th I was summoned and found isolated small patches on each tonsil, whilst the enormous swelling under the chin suggested a bad attack of mumps. There seemed a possibility of pus being present in the tonsils, which were also enlarged, and therefore incised one freely, but only blood flowed. Ordered Eucalyptol inhalations, & gave Etheral Stimulants; but the pulse, which
was alarmingly feeble, grew still weaker, \\
and she died suddenly on the 9th Dec.

The membrane had not increased in extent. \\

Case VIII. George M., aged 18, brother \\
of the above, fell ill on Dec 11th, two days \\
after the death of his sister. The house \\
was crowded with infected, and proper \\
precautions were disregarded.

Dec 13th, when called in, I found, both \\
tonsils covered with a dense membrane. \\
I gave Quinine + Iron, and ordered Eucalyptol \\
inhalations. The temperature & pulse \\
ran high, but the latter became so weak, \\
that I feared the heart would fail in this \\
case also; but the membrane speedily \\
smelted away, on Dec 15th, the temperature \\
was normal, and on the 17th, one small \\
speck alone remained on one tonsil.

He had severe Epistaxis several times \\
up to Dec 16th, and renewed inhalation \\
of the steam through the nostrils.

There were traces of Alburnus in the wind.

Case IX. Emily M., aged 73, rather \\
delicate. Sick at night, on 23rd Dec 1835.

sent word that her throat was sore.
that there was a large white patch on either tonsil. She had been applying
equal parts of Bicarbonate of Soda and Sugar ineffectually. I sent some
Eucalyptol, with instructions to inhale for 5 minutes at a time every half
hour; and I ordered Tincture of Iron and Chloride solution for internal use.
Next day I found that each patch was the size of an almond, but the patient
considered herself better. She had
inhaled far more than the prescribed
time. Two days later the throat was clear. For 28 hours after she had
a dry hacking cough.

These cases by no means represent all the instances of throat affection
which I have treated with Eucalyptol, but every other case of Diphtheria so
treated has run a milder shorter course, so that I have thought it best
to exclude them, lest my Diagnosis
should be called in question.
Those used Eucalyptol with marked
success in 6 cases of Scarletinal
sore throat; in one of severe group in which no membrane was visible or expectorated. On the other hand, I have failed to check with it a single case of Tonsillitis associated with Rheumatism, though the formation of pus in the glands appeared to be retarded. I am not satisfied with this, as the oil is undoubtedly beneficial in Rheumatism of the Arthritic type, so I propose to make further observations. I have no Asthmatic patients at present, but two medical friends, to whom I recommended the drug, give me most favourable reports of its effects.

I wish to observe that, out of the nine cases of Diphtheria mentioned, recovery was rapid in the seven where the oil was used promptly and efficiently. Not one of these seven cases exhibited false membrane for more than seven days, so the last two cases (my experience with the drug having induced confidence in pushing it), became free from membrane in three days.
Of the two deaths, Case II, was, I consider, indirectly due to the child's bad training, whilst the second, Case VIII, was evidently one of general severe blood poisoning, apart from the fact that nearly 3 days had elapsed before the patient was professionally attended.

Except in the houses where these patients resided, I have met with no case of the disease spreading to other inmates, since I have employed Eucalyptol. In the former of the two, it is at least questionable, whether the brother was not infected before I was called in. This immunity from infection was also observed in four families, in each of which one member suffered from Scarlett. I used Eucalyptol spray for the throat. In no case were any of the other children affected. Perhaps, however, much stress should not be laid on this as I strenuously carried out sanitary precautions.

It remains to be seen whether a more extended experience on my part, or the Hope, or that of others, will
confirm Eucalyptol in the high rank which I claim for it in the treatment of Diphtheria; but I submit that I have proved its title to routine use where young children are the patients. Any drug which combines even approximate efficiency with ease of application should be welcome to a child's medical attendant; particularly in the management of a throat affection when merely to get a glimpse of the seat of the disease requires, so frequently, all one's tact and patience.

April 29th 1886. As I have had a severe case of Diphtheria within the last few days I have held back my paper till the last possible day. On the 25th Inst. I was summoned at night to a girl aged 11 who had been ailing since the 23rd & was at this time unable to swallow.

I found considerable swelling on the left side of the neck, great difficulty in opening the mouth at all, a foul tongue & very fetid breath, a large
patch of false membrane close to the angle of the gums on the right left side some small patches commencing to form on the soft palate & one on the right tonsil. The patient was very tractable & I enjoined the use of Eucalyptol inhalations during the night & merely gave an aperient as the bowels were confined. Pulse 120 April 26th. The membrane had spread considerably. Temperature & pulse as last night. In the evening I found still further extension of the false membrane & I now applied a 50 per cent syrup of the oil in Methylated Spirit.

April 27th. Temperature & pulse each 99. The membrane had been in part expectorated & the patient could swallow fairly comfortably. I gave small doses of Tincture of Iron & Glycerin & applied the syrup in the morning again at night when still more membrane had been got rid of. The throat however looked very red.
April 29th, 1886.

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