

The Medical, Surgical & Domestic Uses of Eucalyptus

In consequence of having made a special study of this subject during a 2 years practice of the profession in Sydney, New South Wales the author of these papers has ventured to hope that a few remarks upon the more practical uses of the different varieties of Eucalyptus will not be unacceptable to the profession. The name of the thesis regarding Eucalyptus is of course long, it is counted like all comparatively new remedies as a panacea of all evils, more so perhaps than most, & on this account it has not obtained that practical notoriety (in the Northern Hemisphere at least) which we think it merits. The age of empiricism in the medical profession has now rapidly passed & under the searching eye of science everything must be reduced to practice & proof. It is with a full conception of this fact that the author has ventured to lay before the profession a few of the more practical uses of Eucalyptus where both he & other medical men of his acquaintance in the colonies have found it of real value.

There are about 135 varieties of Eucalypti. The varieties from which the oil is obtained are the Eucalyptus Globulus & the Eucalyptus Amygdalina. The yield of oil from the fresh leaves is about 2.75%. The formula of the oil is $C_{24}H_{20}O_2$. The temperature of distillation is 170° to $200^{\circ}C$. Besides the oil the leaves contain

1. A white body crystallizing in needles mixed with a brownish amorphous mass, both of acid reaction.
2. An acid yellow resin.
3. Eucalyptic Acid precipitated by lead salts.
4. Eucalyptin, a neutral crystallizable bitter substance soluble in ether & alcohol & partly so in water.



Sixteen varieties yield the substance known as "red gum" or "Botany Bay Resin". The gum of *Eucalyptus* *torquata* is most valued on account of its solubility both in alcohol & water, the only insoluble matter being mechanical impurity. The gum obtained from the *Eucalyptus* *gigantea* & *Eucalyptus* *resinifera* is less soluble & some varieties soluble only 10% in alcohol & 4% in water. The "red gum" was found in commerce as early as 1802. It was exported in a semi-fluid state containing from 25 to 40% of the true gum & it was known by the name of "liquid resin". In felling timber for fencing purposes large deposits of red gum are at times met with some of the lumps weighing as much as 5 lbs. *Eucalyptus* "Manilla" is obtained from *Eucalyptus* *manisera*, *Eucalyptus* *divinialis*, *Eucalyptus* *damara*. It differs from ordinary manna in not possessing the purgative properties of that drug, in containing melitose ($C_{12}H_{28}O_{14}$) as its saccharine principle instead of mannite ($C_{12}H_{14}O_{12}$) & in being very susceptible of alcoholic fermentation. It is found in small snow white granular masses very like tapioca. In the early days of the Australian colonies it was said to be the only vegetable food of some of the coast tribes of blacks. An old resident of the New England district told me that he has seen "the manna lay on the East side of the Moorie ranges so thick that it looked like patches of snow". The native name for it is "Cerp".

The Medical Uses, to which *Eucalyptus* is now put in the colonies are very numerous. It is said to be a cure for Rheumatism, Cancer, Phthisis & many other things equally as absurd. We will simply speak of those which we have treated or which we have seen treated.

1. Relaxed & ulcerated sore throats are very common in a

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around Sydney the former being due to the exceedingly relaxing nature of the climate in summer when the strong North East winds blow. The latter being very generally of malarial origin owing to the pernicious habit of allowing vegetable & other matters to be thrown into the streets & to remain there exposed to the sun for hours, & to the sewerage of the city being allowed to flow into the water of our harbour. In both of these cases we have found the inhalation of steam impregnated with the oil of Eucalyptus of signal benefit. There are also lozenges made out of the juice of the Eucalyptus Portulaca by a Victorian firm which are a useful adjunct in the treatment of these cases. I have had several cases of "Clergyman's Sore Throat" which have been much benefited by this treatment. Tonsillitis. In this affection also I have found the use of the Eucalyptus of great value. I had experience of about 6 or 8 cases, 2 or 3 of which had resisted all other forms of treatment & which readily gave way under it's use. In these cases I used both the inhalation & I also caused the inflamed tonsils to be frequently swabbed with the pure extract which is very astringent in character & which very speedily reduced & kept down the inflammation. I of course combined this treatment with the use of an occasional purgative.

Diphtheria. I have only had experience in two cases of this disease, both of which I saw in the early stages. In each small diphtheritic spots had formed on the tonsils & fauces; these were gently touched with a single drop of the pure oil on the point of a camel's hair pencil. The diphtheria instead of spreading shrivelled up & came away & I then again touched the raw surfaces three times a day.

with the fine oil which caused small beads by granulations to form & they soon healed up completely. I only regret I did not have some more cases of this fell malady upon which to try the effects of the Eucalyptus treatment. I feel quite confident that in all cases seen in an early stage a good result would be obtained by its use.

Gangren of the Lung. Here again I believe the inhalation of the Eucalyptus to be, I will ^{say} not a cure but most certainly a palliative to most of the distressing symptoms & most especially to that terrible foeta of breath which is so obnoxious both to the patient & to those around him. I had one case of this under my care & which I treated with the inhalations of the oil & the administration of 10 drops to 15 drops of the extract 3 times a day on a piece of sugar. This treatment I am fully persuaded has no parallel, as I have said all the symptoms are alleviated & the foeta of breath is entirely removed & the breath impregnated with the delicious scent of the Eucalyptus oil.

Fetid Bronchorrhoea. I myself have had no experience of the treatment of this disease with the oil. But Dr. F. a friend of mine in Sydney told me of a case he had that he treated much in the same way as I have stated & which was much benefited.

Ozena. I have treated several cases of this unpleasant affection by means of injections up the nostril of a solution of the oil in alcohol & water of a strength presently to be mentioned. In every case relief was obtained, in most a cure.

4. I will now endeavour to give a short history of a rather peculiar case which recently came under my notice. A male child about 7 years of age had been under treatment of Dr. A. of Wollalra near Sydney for pleurisy (one sided). Hydro-thorax came on & Mr. F. a Sydney Surgeon was called in to tap with the aspirator. Suddenly a rush of air from the lung took place into the pleura & the patient's breathing became very much distressed & he was almost in a state of collapse. The air was speedily let out of the pleural cavity into which a solution of the Eucalyptus oil in absolute alcohol was injected & the opening in the thoracic wall was carefully closed by pads of lint soaked in the oil. In a very short time a distinct odour of the Eucalyptus was traced in the breath showing that it must have entered the lung through the opening in it. Gradually the distress of breathing ceased & in a weeks time the patient was quite convalescent.

5. In Obstetrical & Gynecological Cases I believe preparations of the oil to be unrivalled. Both I & other medical men of my acquaintance in Sydney have used it largely in these cases. An ointment made up of the oil & solid Cosmoline makes a very pleasant lubricant for the fingers in Anti-partum & Post-partum examinations (℞, ℥ Eucalypti (per) ʒj, Cosmoline solid ʒj ℥. ft. Ung. ℥). I always order a little of this ointment to be spread on the clothes applied to the labia after confinement & the vagina to be syringed every morning with some of the alcoholic solution in warm water (an ounce to the pint of tepid water). I also leave a little of the pure oil sprinkled about the bed-clothes &

soire (the oil leaves no grease stains). These
 measures protect the patient from the unpleasant
 smell of the lochia & other emanations, &
 instead of the usual sickly smell of the lying-in
 chamber we get the refreshing odour of an
 Australian gum forest, & moreover I am quite
 certain that any chance of septicaemia is
 entirely obviated. This course of treatment has
 only to be tried to be appreciated & to be very
 generally used. The scent of the oil is very strong,
 5 or 6 drops sprinkled in different parts of a large
 room will speedily fill it with the delicious odour,
 & this will last fully 24 hours. I had a case just
 before leaving Sydney with another medical man
 where there was a very severe flooding post-partum.
 This was with some difficulty checked, but after
 a day or two there was a most offensive putrid
 smell coming from the lochia & the patient's
 pulse & temperature rose. We tried injections first
 of Condy (teaspoonful to the pint of tepid water) &
 then of Carbolic Acid (strength 1 to 60) into the uterus
 but neither of these had the desired effect. I then
 injected the Eucalyptus oil solution into the uterus
 by means of a double channelled catheter. This was
 repeated night & morning for about 3 days, the
 smell having entirely ceased after the 3rd or 4th
 day & the pulse & temperature coming down
 almost to the normal. On the evening of the 3rd
 day whilst injecting the Eucalyptus a small
 organized clot was washed out (we at first thought
 this was a piece of the placenta which had been
 retained but it was not so). This was foetid but
 the smell was masked by the odour of the Eucalyptus.
 After the expulsion of the clot I continued the injections

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for about a week the patient making a splendid recovery. There is no doubt in my mind that this was a threatened case of septicaemia indeed septicaemia had actually set in & I firmly believe that had any other treatment been adopted we should not have saved the patient. No medicinal treatment was used internally. I could mention several other complicated obstetrical cases where much benefit was obtained by the use of Eucalyptus.

In Gynecological cases it is also very useful. I have used it with success in leucorrhoea & in female Gonorrhoea. In ulceration of the cervix, I have had success with 3 or 4 cases treated with the pure oil on a camel hair pencil.

Surgical Uses. It is here that I believe Eucalyptus is pre-eminently a success. The cases that I have to quote in this connection will I think prove beyond a doubt that it is an anti-septic of the highest order. Bacteria cannot live in it, they shrivel up and die. It is really marvellous the rapidity with which healthy granulations form under its use. But what is more marvellous still is the length of time you may keep a dressing on without changing it the wound remaining perfectly sweet & the healing process going on all the while.

About 18 months ago a female child 15 months old was brought into my surgery one night by a man whose wife kept a baby farm. The child was reported to have fallen on a broken glass bottle while at play with some other children. My idea was & still is that the child had been stabbed by the foster father who was a drunken boy about. On examination I found a wound with clearly defined edges about half an inch or $\frac{3}{4}$ of an inch long

situated about an inch above the umbilicus. A
 mass of small intestine was protruding & this had
 become strangulated so that I was unable to return
 it by any means. I therefore enlarged the opening
 after carefully sponging the protruding mass
 with a tepid solution of the oil & aneasing the intestine
 with a mixture of olive oil & Eucalyptus oil (1/2 to
 the ounce) I replaced them & stitched up the wound
 with silk soaked in the olive & Eucalyptus oil. I put
 strips of sticking plaster across the wound to keep the
 tension off the stitches & then I put on pads of lint
 soaked in the olive & Eucalyptus oils & a fine bandage
 over all. I told the people that I had very
 little hope of the child's recovery. I ordered 3 drops
 doses of Laudanum every 4 hours. The next morning
 I called & found the child had had a good night &
 was actually free from pain. I told them to give it
 only small, very small quantities at a time. I continued
 the Laudanum till next morning, but as the child
 was then still free from pain & going on very well
 I stopped it. I left the dressings on for four days
 & on removing them at the end of that time I
 found the wound quite sweet & healing up
 splendidly. I removed the stitches & again
 dressed with the olive & Eucalyptus oils. This
 dressing I left on a week the child meantime
 going on as well as possible & having had
 a natural motion of the bowels since the 6th day.
 This case then on to complete recovery the child
 never having had a bad symptom.
 Just before leaving Sydney I had charge to say
 a very similar case. I was called about 9
 o'clock one morning to the Public School near my
 residence. I was told that one of the lads had

been climbing on a fence under which were some
 bamboo stumps that foolishly had for some
 purpose been sharpened & had staked timely.
 I found the lad lying on the floor with a flap
 shaped wound through the abdominal parietes
 about 1/2 an inch above the umbilicus with an
 opening into the abdominal cavity at the
 upper edge of it; through which an enormous
 mass of the intestines & the omentum (very
 much torn) was protruding. The intestines themselves
 tho very much congested were unimpaired. I
 put the lad under chloroform as he was very nervous
 & struggled greatly & replaced the mass with
 some difficulty after having washed it with
 the Eucalyptus solution & smeared it with the
 oil. I stitched up as before with the silk soaked
 in the oils & put on pads & a firm bandage.
 The lad was taken home on a sofa. I saw him
 that night & as he was restless I ordered 1/2 grain
 doses of pulv opii with 1 gr of oxalate of cerium.
 He passed a good night & next morning was decidedly
 better there being only a very slight rise of pulse &
 temperature. I kept some of the pure oil
 sprinkled about the bed & room. I left the
 dressings on & the stitches in for 8 days without
 touching it, the patient steadily improving each
 day. At the end of that time as I was giving
 up practice before leaving for England I gave
 over the case to my friend Dr. D. of Wollabra.
 He took the stitches out together & Dr. D. continued the
 same line of treatment. He has since informed
 me that the case was quite convalescent & that
 there had been no bad symptoms except that the
 day the stitches were taken out, the boy had

an attack of vomiting which was probably reflex nervous retching. I may mention that this boy craved so for solid food & quite worked himself into a fever on being refused it; that I was compelled on the 4th day after the accident to let him have some boiled fish. Here as in the other case the bowels acted naturally on the 3^d day. These cases are I think somewhat remarkable & I certainly do not think they would have gone on so well under any other treatment.

Another case that I saw in conjunction with Dr. I will I think prove satisfactorily the highly antiseptic nature of the Eucalyptus oil. A child about 3 years old was playing under a fence at which some men were at work when suddenly part of the fence fell on the little fellow producing a lacerated wound of the scalp about 2 1/2 inches long over the occipital bone & further a compound comminuted fracture of the left humerus. There were two wounds in the arm from which venous blood was flowing. There was also a simple fracture of both bones of the left forearm. We of course gave a very grave prognosis & saying almost sure gangrene would set in & advised amputation near the shoulder joint. The parents of the child begged us not to do this. So we first let the fore arm & then syringed out the wounds in the upper arm with the Alcoholic Solution of the oil. After dressing with an ointment composed of the solid Cocaine & the oil we fixed the arm on a rectangular splint & bandaged with a many-tailed bandage. We sprinkled some of the pure oil over the outside of the bandages & on the bed clothes. We then dressed the scalp wound after having stitched it with the oiled threads.

We told the parents we had great fears for the little patient & said we were afraid it would be absolutely necessary to amputate the child's arm eventually. The patient was kept in the recumbent position & the injured arm strapped down lightly to a pillow. I & I saw this case every day for a fortnight all going on well & the dressings & bandages remaining untouched all that time. I then saw the case with him & we carefully undid the bandages & removed the dressing the only smell being that of eucalyptus & the wounds granulating healthily & looking well. The bone was united in one part but not in the other we thought. The exuberant granulations were touched with sulphate of copper & fresh dressings were put on. The bandages of the fore arm were tightened & the scalp wound which was almost healed-dressed. These dressings were again left on for a fortnight at the end of which time we found the wounds of the arm almost healed. The upper part of the broken fragment united firmly to the upper fragment of the humerus. The lower ends were not united. We left it thus for another week & then as the boy's health was good we called in Dr. J. of Sydney when he gave it as his opinion that there was a small piece of muscle between the lower ends of the bone preventing their union. He proposed to cut down & remove this & to bring the two ends to apposition. Leaving Woolahara at this time I am not able to state what was the result of this operation.

In the case! An old washerwoman with an unmistakably alcoholic constitution came

To me one evening with the fore finger of the
 left hand very much crushed & lacerated. I
 wished to amputate but she would not permit
 me to do so, I therefore put it into shape as
 best I could & put on a dressing of the
 ointment before spoken of & put it in a splint
 to the hand in a sling. I gave her a small bottle
 of the pure oil telling her to sprinkle a few
 drops on the outside of the bandages twice a day
 & to come back to me in 3 days time. She never
 came & I thought no more about the matter.
 About 3 weeks & two days afterwards she walked
 into my surgery & upon my enquiring what had
 become of her finger & why she had not come up
 when I told her she said it had given her no
 pain or uneasiness so she had left it alone. To
 my utter astonishment I found she really had
 in the very same dressing I had put on 3 weeks
 before & had done nothing except sprinkle a
 few drops of the pure oil on the outside of the
 bandages each day. I found the finger well
 & fairly useful. The old lady called upon all her
 folks to bless me & there being decidedly
 "spiritual" I suppose I shall be blessed.
 I have quoted these few cases to show where I
 think the great use of the Eucalyptus dressing
 comes in, namely in cases where we require
 absolute rest for the parts for many days. I
 myself would not have the slightest fear
 of a wound "going wrong" if these dressings were
 left on even for a month, the only thing being
 necessary to sprinkle a little of the pure oil
 on the outside of the dressing two or three times a
 day & to keep a little sprinkled under the

bed clothes if the patient be in bed. I am sure this would be a useful adjunct to the operating theatre, it would be so easy to impregnate the atmosphere of it with the oil. My idea is that bacteria cannot live in an atmosphere of the oil but I have not had an opportunity of testing this.

In dressing rooms the use of the oil would be a great boon for the unpleasant & unhealthy odours would be entirely done away with by merely sprinkling a little about the room once or twice daily & nothing but the fragrance of the oil would be left.

Domestic Uses. Here again it is very useful. As a deodorizer & disinfectant I have used it & have caused it to be used largely. A little sprinkled down water closets or cess pits (a few drops only being necessary) will entirely kill bad smells & keep a house pure & healthy. I inadvertently threw some bottled specimens I had & which had gone bad down the cess pit of a W.C. at my house & for some days we were unable to use the W.C. on account of the horrible stench. I tried Carbolic, Chloride of lime & other deodorizers but the smell overpowered them all. I then sprinkled some of the Eucalyptus oil (pure) down into the pit & this entirely killed the smell. I used it every morning for a day or two & we were not troubled again with the bad smell. As I have said before in a sick room it will be found invaluable.

A few of the leaves either fresh or dried put into among clothes are a certain preventive against moths.

It may be used as an argument against the use of the Eucalyptus that the article is too expensive. But such a small quantity is required for the purposes I have named that I don't think it would be found so expensive.

The formula for the Alcoholic Solution of the oil is

- Pure Eucalyptus Oil 3 parts
- Absolute Alcohol 15 parts
- Water 150 parts.

This solution will keep any length of time. The author of these papers only regrets that time does not permit him to write more fully upon what he considers to be a most important subject. The wonder is that it has not come more into use than it has.

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June 8th 1882