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OBSERVATIONS  
ON THE  
PREPARATION OF SOPORIFIC MEDICINES  
FROM  
GARDEN LETTUCE,  
*THE LACTUCA SATIVA OF LINNÆUS.*

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By ANDREW DUNCAN *sen.* M. D. & P.

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*From the Memoirs of the Caledonian Horticultural  
Society, No. 2. p. 160. & seq.*

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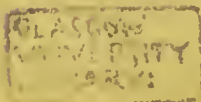
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*Observations on the preparation of Soporific Medicines from common Garden Lettuce.*

(Read 6th March 1810.)

OPIMUM, or the inspissated white juice which exudes from the capsule of the *Papaver somniferum*, when wounded, has long been allowed to be one of the most useful articles employed in the alleviation or cure of diseases. The high encomium bestowed upon it by the illustrious SYDENHAM \*, has been fully confirmed by the testimony of many succeeding practitioners. It is, however, much to be regretted, that there are individuals of the human species, with whom, from peculiarity of habit, opium seldom fails to produce distressing consequences. There are also conditions of disease, in which it may be very necessary to induce sleep, or allay pain, though circumstances occur by which the use

\* “Ita necessarium est Opium, in hominis periti manu, ut sine illo, manca sit, ac claudicet medicina.”—*Sydenham, de Dysenteria anni 1670, &c.*



of opium at that time is contraindicated. Hence, it has been long a desideratum in the healing art, to discover other powerful quieting medicines. For, although it is hardly to be expected, that an article will ever be discovered, so extensively useful as opium, yet, a good soporific may be found, which with some, will have less influence, either as exciting sickness at stomach, as occasioning confusion of head, or as inducing a state of constipation.

It has been the opinion of many, that all the milky juices spontaneously exuding from wounded vegetables, possess somewhat of the same sedative power, with the milky juice of the poppy. Few plants in Britain, afford such milky juice more copiously than the common garden Lettuce, the *Lactuca sativa* of Linnæus; and every one must have observed, that this juice, when spontaneously inspissated by the heat of the sun, on the wounded plant, soon assumes the dark colour of opium, while, at the same time, it possesses in a high degree the peculiar, and I may say, specific taste, which distinguishes that substance. And besides this, it is a well known fact, that lettuce was much used by the ancients as a soporific.

These circumstances led me to turn my thoughts on some method of collecting and preparing this substance, that I might try its effects in the practice of medicine. And, after

several trials of different modes of preparation, what I shall now briefly describe are the best methods I have yet been able to discover.

I dedicated to this experiment, in my garden at St Leonard's Hill, near Edinburgh, a small bed of that variety of lettuce, which is commonly known among gardeners by the name of *Ice Lettuce*. I allowed the plants, about a hundred in number, to shoot up, till the top of the stem was about a foot above the surface of the ground. I then cut off about an inch from the top of each. The milky juice immediately began to rise above the wounded surface. Though then of a white appearance, it had next day formed a black, or dark coloured incrustation, over the surface where the stem was cut off. I found it impossible to separate this by scraping, as is done with the milky juice exuding from the head of the poppy, when it has assumed the form of opium. I therefore cut off with a sharp knife a thin cross slice of the stem, to which the whole of the dark-coloured opium-like matter adhered. This was thrown into a wide-mouthed phial, about half filled with weak spirit of wine, the *alcohol dilutum* of the *Edinburgh Pharmacopœia*, formed of equal parts of rectified spirit and water. By this menstruum, the whole black incrustation on the thin slice of the stalk was dissolved, and the spirit, as may readily be concluded, obtained both the colour and taste of the black incrustation.



Each of my plants, in consequence of the fresh wound inflicted by the removal of the thin cross slice, afforded a fresh incrustation every day. And by throwing these into the phial, I soon obtained what I concluded to be a saturated solution of the exudation from the lettuce, or rather of the milky juice in its inspissated state. It was then strained off, to separate the pure solution completely from the thin slices of the stalk. To this strained spirit, which had nearly both the appearance and taste of the ordinary *laudanum* of the shops, I have given the name of *Solutio spirituosa succi spissati lactucæ*. From trials made with this solution, both on myself and others, I have no doubt that it is a powerful soporific. But to obtain a form in which it might be exhibited, with greater certainty as to the dose, I evaporated the spirit, and thus brought the residuum to a dry state. In this state, it has very much the appearance of the opium imported into Britain, particularly of that which is imported from Bengal, and which is a much softer substance than the Turkey opium. To this *opium-like* substance, I have given the name of *Lactucarium*. And from some trials which I have made with it, when exhibited under the form of pills, it appears to me to be little inferior in soporific power to the Opium which is brought from Bengal.

From the *lactucarium* thus obtained, I have formed a tincture, by dissolving it to the extent of one ounce, in twelve of weak spirit, which is the proportion of opium to spirit, in the *Liquid laudanum* of the Edinburgh College. To this formula, I have given the name of *Tinctura lactucarii*. I consider it as the best formula I have yet been able to contrive, for obtaining the soporific and sedative powers of the *Lactuca sativa*. And in different cases, I have, I think, seen manifest good effects from it, both as inducing sleep, allaying muscular action, and alleviating pain, the three great qualities of opium, which demonstrate it to be one of the most powerful sedatives. At present, however, I intend nothing more but to communicate to the Caledonian Horticultural Society a method of preparing a soporific medicine from common lettuce. For ascertaining more fully its medicinal effects, I am at present engaged in a series of trials, which may perhaps be likewise communicated to them.

Meanwhile, it will afford me great satisfaction, if the above short account shall draw the attention of others, particularly of professional gardeners, to the same subject, and shall lead to the discovery of a better method of obtaining an useful medicine, from a plant so easily cultivated in every garden. Perhaps this important object might be somewhat forwarded,

if the Caledonian Horticultural Society were to propose a prize, as a reward to the person who should be most successful in preparing a medicine from the milky juice of the *Lactuca*. But it should be an essential condition of that prize, that he should send them, not only a specimen of the substance prepared, but also an exact account of his method of preparing it.



In consequence of the above suggestion, the Caledonian Horticultural Society, at their quarterly meeting on the 6th of March 1810, agreed to propose a Prize Medal for each of the two following questions :

1. For the best method of preparing a soporific medicine from the inspissated white juice of the common Garden Lettuce. Specimens of the medicine to be produced.

2. For the best method of preparing opium in Britain, and the most advantageous manner of cultivating poppies for that purpose.



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*Further Observations on the preparation of a  
Soporific Medicine from common Garden Let-  
tuce.*

By Dr DUNCAN *sen.*

November 1811.

FROM the writings of the most eminent medi-  
cal authors, it appears, that garden lettuce was em-  
ployed many centuries ago, for the purpose of pro-  
curing sleep. Galen, who flourished about the  
commencement of the Christian era, mentions it  
frequently in his writings. And it is said, that  
in an advanced period of life, when distressed  
for want of sleep, he used it with success\*.

Among the moderns, this article has not been  
altogether neglected. Some observations and ex-  
periments have been made respecting its medi-  
cal powers, both in England and in America ;  
particularly by Dr Cox of Philadelphia, and Dr  
George Pearson of London.

About two years ago, I read to the Caledonian

\* " Hypnoticam esse jam cognoverunt veteres : Celsus,  
qui papaveri ideo adjungit ; Galenus, qui sibi ipsi senex in-  
somnia vesperi lactuca comesa somnum conciliavit."—MUR-  
RAY, *Apparatus Medic.* vol. i. p. 109.

Horticultural Society, a short account of a method of preparing a soporific medicine from this plant. That account so far engaged the attention of the Society, that they proposed a Prize Medal as an honorary reward, *for the best method of preparing a soporific medicine from the inspissated white juice of the common garden lettuce.*

I am happy to learn that some ingenious men, have not been neglectful of this subject; and I would fain hope, that even our inconsiderable premium may lead to an honourable and useful competition. Among others, I have myself made farther trials with this vegetable, and I now present to the Society specimens of five different preparations of lettuce, all of which, may, I think, be usefully employed in the practice of medicine.

Of the method of preparing the first, second, and third of these, viz. 1. the Spirituous Solution, or tincture of the dried juice; 2. The Extract, which I formerly styled *Lactucarium*, and which is prepared by the evaporation of that solution or tincture; and, 3. The Tincture of the *Lactucarium*, which is prepared by dissolving that substance in diluted spirit of wine, I have nothing to add to what I formerly related to the Society. I may however observe, that, from repeated trials, I have found all of them to be useful soporifics. But the preparation of these requires much time,

and great attention ; and in preparing the lactucarium, it may be easily injured by the improper application of heat.

The two additional preparations, which I now present to the Society, the Inspissated Juice, and the Tincture of the leaves of Lettuce, may be made very easily, and at a very trifling expence. Although not so powerful as the solution or extract, prepared from the inspissated milky juice, yet they will, I am persuaded, be found upon trial, to be highly useful in the practice of medicine.

*Method of preparing the Inspissated Juice of Lettuce, or the Succus Spissatus Lactucæ recentis.*

TAKE any quantity of the leaves and stalks of the lettuce, when the plant is nearly ready to flower. Bruise them well, and including them in a hempen bag, compress them strongly till they yield their juice. Let this juice be evaporated in flat vessels, heated with boiling water. Let the evaporation be continued till the expressed juice be reduced to the consistence of thick honey.

According to the trials which I have made, twelve pounds of lettuce will yield about eight ounces of inspissated juice.

*Method of preparing the Tincture of Lettuce-leaves ; or the Tinctura foliorum siccatorum Lactuæ sativæ.*

To one ounce of the dried leaves and stalks of the lettuce cut down, add eight ounces of the diluted Alcohol of the Edinburgh Pharmacopœia. Let the vessel containing this mixture, be kept for a week in a warm place, shaking it frequently. Let the liquor then be strained through paper, and kept for use. About fifty drops, may be taken for a dose.

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*Additional observations on the Lactuca, presented to the Caledonian Horticultural Society, by Dr Duncan sen. May 1. 1812.*

IN two former short communications to the Society, I have given an account of a method of preparing from the common garden lettuce, different articles, which may, I am convinced, be employed with advantage in the practice of



medicine. To these I have given the following names :

1. *Solutio vel Tinctura succi spissati Lactucæ,*

Prepared from the inspissated juice spontaneously exuding from the plant when wounded.

2. *Lactucarium,*

An extract prepared by evaporating the above solution or tincture.

3. *Tinctura Lactucarii,*

Prepared by dissolving the lactucarium in proof-spirit of wine.

4. *Succus spissatus Lactucæ,*

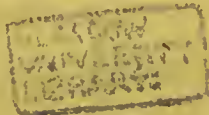
Prepared by inspissating the expressed juice of the recent plant.

5. *Tinctura foliorum Lactucæ,*

Prepared by extracting the active powers of the lettuce, from the leaves of the dried plant, by warm infusion in proof-spirit.

To my former observations, I can now add, that during the course of last winter, I have made many trials of these articles, both in hospital and in private practice. I have particularly employed the first, and the fourth of these

preparations, in the clinical wards of the Royal Infirmary, where the effects were observed by many attentive and ingenious students. They have witnessed the benefit which may be derived from them in procuring sleep, in alleviating pain, and in allaying inordinate action, particularly troublesome cough. I am therefore not without hopes, that when the experiments I have made, are more generally known, they may have the effect of calling the attention of other medical practitioners, and of some intelligent gardeners, to a subject, which, in my opinion, is of considerable importance.





Leith

Dr Geo Anderson

