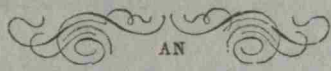


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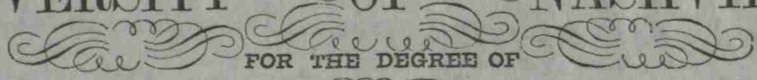
Secale Cornutum.

SUBMITTED TO THE

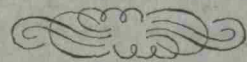
PRESIDENT, BOARD OF TRUSTEES, AND MEDICAL FACULTY

OF THE

UNIVERSITY OF NASHVILLE,



FOR THE DEGREE OF



DOCTOR OF MEDICINE.

BY

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W. T. BERRY & CO,
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Secale Cornutum.

Since the first discovery of this substance, there has existed a great diversity of opinion as to its nature. Some have made it depend on atmospherical changes, or local influences, such as long-continued rains, fogs and noxious dews, or on too poor or humid a soil; by others it was considered as being produced by the puncture of certain insects. But it is now generally conceded to be a parasitic plant, of the order fungi. It grows on the ear of rye, barley, and wheat. From its peculiar shape, it has been called spurred, because of its resemblance to the spur of a cock. And because it is most abundant in rye, it is called *Secale cornutum* horned or spurred rye.

By M. Leveillé in a memoir published

by him in 1826. in the annals of the Linnæan Society of Paris, it was announced, that it was in reality an alteration of the grain, and was produced by the presence of a parasitic fungus which he named *Sphacelia Segetum*, intending to signify by this title both the color of the diseased grain and the sad consequences which result from its use when mixed with bread. According to Mr Duckett of London, the beginning of the growth of ergot, is marked by the appearance about the young grain and its appendages, of multitudes of minute filaments, like cobwebs which run over all its parts, cementing anthers and stigmas together, and of a white coating on the surface of the grain. from which on immersion in water

innumerable particles separate, and
 after a time sink in the fluid. These
 particles when examined by the mi-
 croscope prove to be the reproductive
 agents, germs or sporidia of a species
 of fungus, and may be observed to
 sprout and propagate in various
 ways under proper circumstances.
 The filaments are the results of the
 growth of these singular germs. At
 first it is invisible but it soon increas-
 es in size, and breaks through the
 envelops of the grain, while the peri-
 sperm, which was very small and white
 assumes a violet hue, then elongates
 or grows, and becomes hard and brit-
 tle escaping from between the husk
 and pushing before it the fungus
 found at its free extremity. This

fungus is soft and yellow, of a disagreeable odor and a sweetish taste
 This fungus is rarely met with on the ergot of the shops, being detached either in the gathering, or by friction against each other. This may explain why the ergot so often proves worthless when administered. Therefore great care should be exhibited in the choice of this article. Those grains should be rejected which are smooth and brilliant externally, as well as those having numerous deep fissures, for the one has been deprived of its sphaerulated portion by friction and the other altered by successive rains. The preference should be given to those grains which still retain the fungus on their summits and the

surfaces of which are entire of a violet color and dirty aspect, and covered as it were, by powder. It is most abundant on rye which has been sown late in the season in low moist situations, particularly when a hot dry summer succeeds a rainy spring. Bread made from this kind of rye has a nauseous acrid taste and produces numerous fatal diseases, as spasm extreme debility and mortification of the extremities. At various periods the most alarming consequences have followed the use of bread made of this diseased grain, amongst the poor of France & England. It is said to have been equally fatal to brutes & fowls when fed on it by way of experiment. The ergot is found projecting from.

among the leaves of the spike, or ear it is a long crooked excrescence resembling the spur of a cock, pointed at its extremity, of a dark brown or violet color externally and white within some of the spikes are occupied wholly by spurs, while others have two or three only, interspersed with the genuine grains of rye.

The medicinal properties of this singular substance were first made known to the public by Dr John Stearns of Saratoga County New York in the year 1814 in a letter to Dr Scherz, in which its powers, *ad partum accelerandum*, were extolled Empiricism was every where in possession of this article, long before they ever thought of using it in New York

The German name Mutterkorn literally signifies womb grain or uterine rice

It is natural thence to conclude that a peculiar action on the womb was recognised in it and that it was used from the remotest times. We find

that ergot was long used in Germany as a sovereign remedy in floodings.

Its use is far from being new to the midwives of France & Italy as being good in accelerating parturition. Ergot yields its virtues to water & alcohol. Long boiling impairs its properties

The aqueous infusion or decoction is claret-coloured, and has an acid reaction. Nitrate of silver, tincture of galls acetate & subacetate of lead precipitate it. Ergot has been analyzed by a number of chemists. Wiggers obtained a

peculiar principle which he denominated ergotin, under the impression that it was the active principle.

It was obtained by digesting ergot in ether and afterwards in alcohol evaporating the alcoholic solution and treating the extract thus obtained with water, which left the ergotin undissolved. It was of a reddish-brown color, a peculiar nauseous odour and a bitter slightly acrid taste soluble in alcohol but, insoluble in water or ether. The same course has been followed by other chemists but, not with equal success. Wiggers is not thought to be justifiable in appropriating the name of ergotin to the substance until farther researches have been made. The active principle is most

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generally, thought to reside in its
fixed oil. Ergot should be kept
in well stopped bottles, secure from
light & moisture. It is sometimes at-
tacked by a minute worm which con-
sumes the interior leaving only the
shell & excrementitious matter. A
small quantity of camphor placed at
the bottom of the vial is said to
guard it against the depredations
of these animals. Though ergot may
be preserved many years without
its virtues deteriorating, yet it is best
to renew it every two or three years
lest by some accident it may have
lost its virtues.

Therapeutical Action.

The action of this medicine is too
well ascertained at the present time

to permit it any longer to be called
in question. As a partus accelerator
it stands at the head of the list in
the materia medica, and is capable
of producing the most felicitous re-
sults in the hands of judicious men
and alike competent to the develop-
ment of sad results when ignorant
ly or recklessly employed. It is
known & acknowledged to stand at
the head of those remedies which ex-
ercise their specific influence upon
the womb. It is perhaps the only
medicaine which acts specifically
upon that organ in producing its
contraction. The most celebrated
obstetricians both abroad & at home
are its most powerful advocates.
In large quantities it often produ-

ces nausea & vomiting, and in very large doses it produces giddiness, dilatation of the pupils and even stupor, proving that it also possesses narcotic properties. In small quantities it has no obvious effect upon the male, but when much of it is taken it has been known to be productive of very disastrous consequences, gangrene of the extremities has frequently been the result of its excessive use. Ergot is now recommended by accoucheurs for arousing or accelerating the uterine contractions during travail, & for preventing or remedying the inertia of the womb, and the hemorrhage which so often accompanies it, after delivery. After its administration the uterine actions are observed to become

more active in the course of ten or fifteen minutes, and if previously slow and feeble, to become more frequent & energetic, and reappearing if before suspended. The contractions of the womb under the effects of this medicine unlike those which attend natural labour have a peculiar character, and cannot be mistaken. The uterine globe remains hard & contracted as soon as the action is felt, the pains are continual instead of intermittent, though there are moments when the patient does not seem to suffer at all, yet if the hand be placed over the abdomen, the womb will still be found to be hard & contracted and there is not that regular succession of repose & contraction which

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is constantly observed when the trav-
ail is spontaneous. The accouchment
is ordinarily terminated in from an
hour to an hour & a half after its
exhibition, but its action soon wears
away after that period, and therefore
if there is any necessity for its fur-
ther use, it must be again renewed.
When it proves wholly inefficacious
the result is ascribable to idiosyn-
crasy of the individual, or inferior-
ity in the paret employed. On
account of the continued contrac-
tion which this medicine produces
upon the uterus it should never
be administered when the os uteri
is undilatable, otherwise there
would be danger of injuring the
child from the incessant pressure

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which is maintained by the organ under its influence. Such has been the observation of numerous practitioners, and the death of the infant has in all probability been frequently caused by its injudicious employment. It has been maintained by many that since its introduction, the number of still-born children has been augmented, and that observation has sufficiently shown, that where it is given to expedite delivery more or less danger always accrues to the offspring; either by the induction of asphyxia, or of positive death, owing to the violence of the contractions of the uterus, or by the deleterious agency of ergot on the foetus. But even were we to admit its prejudicial effect

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on the foetus in utero to be true, and it has been deposed to by many obstetricians - and that the number of still-born is greater than formerly, which however appears to be by no means the case - its influence could be but small, and could not account for the statistical differences that have been noticed. In many cases ergot has been largely administered, and yet the child has been born alive.

The pelvis should be well formed the child presenting either by its cephalic or pelvic extremity, and its position well ascertained, before this powerful drug is administered by any physician, it should also be known that no serious obstacle exists within the vagina at the uterine orifice or

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at the external parts; that is to say
where the cervix uteri is sufficient-
ly dilated or at least soft supple, and
patulous enough to admit of dilata-
tion, and where the membranes are
ruptured. On the other hand its admin-
istration should be avoided as much
as possible in primiparæ, and if at
any time its use should be determin-
ed on, or thought to be indispensable
in them, the perineum must be support-
ed with the greatest care, lest if the
delivery should prove rapid, it be
exposed to a considerable rupture.

The cases to which it is thought to
be especially adapted are those of lin-
gering labour, where the os uteri is
sufficiently dilated, and the external
parts sufficiently relaxed, when no

mechanical impediment is offered to the passage of the child, and the ^{delay} is ascribable only to a want of energy in the uterus. A slowness or feebleness of the contractions may occur at the very commencement of the labour, and persist throughout its whole duration; the pains are quite feeble the dilatation of the os uteri is effected but very slowly, and the engagement of the head is trifling; and this delay is owing to a local disposition of the womb, the determining causes should be carefully sought after, and if they be owing to a debility, or an imperfect organization of the uterus itself, though the patient may be otherwise healthy that is the muscular apparatus of the womb may be deficient in contractile

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force, while the other muscles of the
organism are endowed with their
usual energy; and hence the dilata-
tion of the os uteri is effected slowly
for notwithstanding the cervix no
longer ^{offers} any resistance, the organ ap-
pears incapable of determining the
expulsion of the foreign body it enlo-
ses. In such cases the ergoted rye is
the only article capable of stimula-
ting the enfeebled contractions.

It is not at all unusual, to find a
labour which has heretofore been pro-
gessing favourably to become at once
arrested, and the pains which up to
that time were strong & frequent,
to become relaxed or even to disap-
pear altogether; when this cessation
of the pains, can be ascribed to debil-

ity of the womb itself, since there are some women in whom the contractile force of this organ is so easily exhausted, that the contractions after having proved quite sufficient for the earlier steps of the labour diminish or disappear all at once without any other appreciable cause than this extreme feebleness of the womb. In all such cases there is nothing which will prove so highly serviceable to bring on the pains and restore the contractile power of the womb as a full dose of ergot. The circumstances justifying and forbidding the use of ergot in parturition are well marked out that no man need err in its administration. If the os uteri be at all dilated or in a

dilatable state, the proper uterine contractions being wanting, the ergot may be safely administered, and most happy effects will follow its exhibition. But if the uterine contractions be pretty strong & regular, the os uteri undilatable, and every feature of the case indicating the use of the lancet, the administration of ergot will be of no avail, and can do nothing but harm to the patient, by producing a rupture of the uterus.

One of the latest writers on parturition (W. Tyler Smith M.D) says
 "Ergot is a medicine of direct, and not of spinal reflex action. It is of extreme value in cases in which from the state of the passages, there is no danger of laceration or rupture. Its

action on the uterus through the spinal centre, is as special as the influence of tartar emetic on the respiratory muscles" On account of the influence of ergot on the life of the child either as a direct poison, or by interfering with the materno-foetal circulation, it should not be used until the usual reflex modes of exciting the uterus to action had been tried in vain. It has long been a question of debate whether ergot which possesses in so high a degree the property of stimulating the enfeebled contractions & of arousing them when suspended, whether can it develop them when they have not yet existed? Although it has been doubted by some of the most eminent obstetricians and even

denied by some, that ergot possesses this power, yet the profession are gradually becoming convinced and forced to acknowledge that it is able to bring on these contractions, and that it exerts its specific influence upon the uterus, without having previously been brought into action by the natural contractions of the womb. For the purpose of inducing premature labour, it has been necessary to give it in larger doses, from two to twelve drachms of the infusion have been given until it produced the desired effect.

In menorrhagia where the texture of the womb is in a lax & flaccid condition, of all remedies the most clearly indicated is

the secale cornutum, because if ^{it has} any effect whatever upon the non gravid womb, it would be the effect of condensing. The uterine solids, for if the womb in its substance, shall become condensed all its parts will receive the benefits of that condensation. A few doses of the ergot will frequently put an end to the menorrhagia & is always a good and safe remedy in that complaint.

The excito-uterine action of ergot has also been shown in suspension of the menses, which it will often cause to return in a few days as has been shown in a number of instances. The effect of ergot in expulsion of uterine polipi is also worthy of notice. The polipi being

foreign bodies within the womb
The contractions induced by the ergot
breaks off the connections from the
womb & causes the mass to be expelled

Its haemostatic powers are conclusively
shown in the successful treatment of
epistaxis, haematemesis & haemoptisis
and many cases have been published
in confirmation of its possessing
such virtues. And again as it proved
useful in uterine hemorrhages it was
conceived that it might exhibit like
powers in other hemorrhages, and
was found useful in leucorrhoea.
gonorrhoea dysentary &c. The narcot-
ic or sedative property, which it exhibits
in certain cases & doses, and the
sedative action which it exerts in oth-
ers may render it serviceable in

these affections, whatever may have been the process of reasoning which originally led to its employment,

It is said to give rise to profuse sloughing ~~of the~~ when applied to abraded surfaces, placed upon wounds nearly healed it has caused a purulent matter to be discharged in less than twenty four hours; and the wounds thus treated even under the proper curative means are very long and tedious in healing. In the form of powder it has been found very serviceable in arresting hemorrhage, even in the form of infusion it possesses the power in an extraordinary degree lint dipped in the infusion and placed on the orifices of bleeding vessels, has instantly arrested the

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hemorrhage. Excessive dilatation of the eyes
from the use of belladonna is said to disap-
pear if the pulverized ergot be used as
a snuff.