The History and Progress of Anaesthesia with an account of the Anaesthetic application of Chloroform and Some Remarks in its defence.

A Thesis by

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"And therefore as a stranger give me welcome, there are more things in Heaven and Earth, Horatio, than are dreamt of in thy Philosophy."

Shakespeare
J. C. Simpson, M. D., F. R. S.,
Professor of Midwifery in the University of Edinburgh,
and Physician-Attendant to Her Majesty in Scotland.

Sir,

Through a sentiment of admiration for your talents, and your zeal, which have enabled you to improve so extensively the science of medicine, and which have placed you in a position pre-eminently beyond all others at the head of your profession, I have been sufficiently prompted to subscribe this my thesis to you, as the only small tribute of gratitude and esteem, which is within the power of your respectable pupil to bestow.

A. Thomson, J. Obstetrician.

University, Edinburgh. March 30th, 1849.
The

HISTORY and PROGRESS
of

Anaesthesia.

One peculiar feature characterising the advancement of our knowledge in the healing art at the present day, is the employment of agents, which, from the very nature of their effects upon the human body are termed Anaesthetics. The administration of these agents, whose effects are not more obvious and marvellous, than safe and beneficial in alleviating the sufferings of human beings, placed under certain conditions, has consecrated and with justice met with the approbation, not only of every enlightened and unprejudiced member of the medical profession, but also with that of the Public generally.

In almost every City and large Town; not only in Europe, but likewise in many parts of far distant divisions of the Globe; whoever, in fact, enlightened atten-
1. Anaesthetics are agents that produce anaesthesia, which (from the Greek word *avaiodýnia*, insensibility with the root *avaiod* grew to be insensible) signifies complete insensibility, of a part or the whole of the body, to pain and every other impression made upon it by external objects. Professor Simpson re-applied the word, as first used by the Greeks, to designate the effects of such agents as ether and chloroform on the human body. The word has also long been used by Pathologists to denote insensibility insensibility of any part of the body, without loss of motion. But this is a restricted application never given to the word by the Greeks. Some, however, have, though incorrectly, objected to the meaning in which Professor Simpson gave to the word. But it must be remembered that it is only the same sense in which Dr. C. himself used it. Thus when speaking of the anaesthetics as producing complete insensibility to pain before surgical operations, he makes use of the expression — "avaiodýnia" (see lib. 4, cap. 10.) And again when speaking of the use of anaesthetics employed, when applied upon any part, to produce local anaesthesia; he says: — "avaiodýnia axivoun evípeíen / to induce insensibility to pain without motion."

When insensibility of any part of the body, arises from pathological causes, then it ought to be termed idioc-
Since of medical men have become associated, there the application of these anaesthetics used at the present day, namely, Ether and Chloroform, has become very exten-
itive; in the practice of the surgeon and the accoucheur.

In considering the importance which has attached the discovery of the anaesthetie properties of Ether and Chloroform, and the extensive employment of these substances (especially the latter) in entirely abolishing the pain unavoidably attendant upon surgical oper-
tations, the question was naturally presented itself to the mind in this: Had the idea of using anaesthet-
ces for the above object never suggested itself to the cultivators of our profession in bygone times? or, were the wondrous effects of such agents more daunt-
R in the philosophy of our ancestors? This question will readily be answered in the affirmative by those who have at all searched into the col-
unious records of antiquity, for such an-
Pathic Analgesia; and, when it is produced by
the physiological action of drugs, it ought to be
called artificial analgesia or anaesthesia only,
as a matter of distinction. That is to say, if we are to use
the same word to denote two widely different
conditions.

The remedies used to combat pain may
with as much propriety, be divided into two
classes. In the first ought to be included
those which allay or remove pain when already exist-
ing, without interfering with sensibility or consciousness;
these are anodynes. In the second all those which
prevent the production of pain by entirely disturbing
the function of sensation and consciousness; these are:
Analgesics, which although they can prevent pain, yet
they can remove it, but not without interfering with the
faculty of sensation. Analgesics then are those medicines which
produce insensibility to pain; Analgesics can do so when
free they are Analgesics; but Analgesics they are
also Anodynes in smaller doses. But as the Analgesia
in action of Analgesics is attended with much danger
to life they are not now always employed for
the production of Anaesthesia, merely.
formation. But to those who have never bestowed their thoughts on this subject I have taken it upon me to offer some remarks in order to prove, and to inform them, that neither the idea nor the practice of using anaesthetics, is indebted for its origin to the inventive genius of any of the present century.

True it is indeed, that the substances used in former times to render the human body insensible to pain, were not so efficacious and objectionable in their action, as those now employed at the present time for the same purpose; but this fact cannot be used as an argument against the evidence, which I am about to adduce, to prove that it was the practice in former times, even to an ancient state, to administer substances endowed with anaesthetic virtues, in order to produce anaesthetic effects. Rather are we to suppose from the comparatively few records handed down to us by the ancients relative to the use of such affairs; that they attached but little...
Importance to their employment of such agents that they were unimpressed with the idea of the benefits to be derived from their administration, nor that they exercised their minds but little in order to advance their knowledge on this subject, by endeavouring to discover other materials, which would suit them better and be more appropriate for the object which they had in view. But we must ever bear in mind that, they were unaided by an acquaintance with the various products of chemistry, which have nowadays put us in the possession of so many agents having powerful actions on the human body. And if the employment of anaesthetics in our own days, has become more effectual and prevalent than in ancient times; we must attribute such a circumstance rather to the advanced condition of chemical science, which has revealed and afforded to us numberless substances which were unknown to and consequently beyond the reach of the ancient physicians.
The results of the cultivation of chemistry in modern times, we are indebted for the materials which are now, displayed, alone, as anaesthetics. And if in times when chemistry had not yet dawned to draw aside the mysterious veil, which was long thrown in obscurity the properties and mutual actions of matter; men were to be found, without the aid of her assistance, endeavoring to procure, from nature, materials, crude and merely prepared, for the purpose of applying them with the intention to obliterate the lingering suffering unavoidably inflicted by the operations of surgery; then undoubtedly, with justice to them, the more praise and honor is due.

But as anaesthetics have been used at different periods from ancient life to the present time, and for the same purposes as that for which they are now administered, I shall, without any further preparatory remarks, proceed to mention in detail the evidence, which I have collected, in
order to prove that which I have already asserted. In doing so, I will not confine myself to the employment of 
analgesics in Medicine and Surgery alone, but will also advert to their employment for widely different purposes; amongst which may be mentioned their application in producing insensibility and loss of consciousness, in the ceremonies connected with the rights of certain Heathen Religions: in connection with Sorcery: and in other instances which will be specified. The reason for doing so is, that these different applications of such means differ from each other only in the object for which they were had recourse to, and not in the individual effects attending them. Besides they tend to do more fully the knowledge with the ancient treatise of substances possessed with anaesthetic virtues.

In examining the literature handed down to us by the Greeks and Romans it that part of it, especially which is referred to the treatise of Medicine; the authors in whose writings references are to be
found, as to the practice of administering
anæsthetics, in Surgery, are Pliny and
Celseoovides and Aperullus. When we com-
pare the works of the first two of these au-
thors, we find several passages occurring in
both having an startling a resemblance
so each other, that we are led to the sup-
position that the must have copied from
the other. Therefore to determine the vali-
dility or incorrectness of such a supposition,
it will be necessary to determine at
a certain, at what period these two celebra-
ed authors lived, and thus to determine
whether of them must be considered as
the most ancient, and to whom the pre-
ference of priority is due.

Pliny is stated to have been born
in the twenty-third year of the Christian
era; and Celseoovides is supposed by many
to have written his work, on the Materia
Medica, during the reign of Vespasian, who was
made Emperor in A.D. 45. Thus there is good
ground for supposing that both Pliny
and Celseoovides must have written about
the same period. Pliny who do faithfully
Mentioning the names of all the authors from whom he borrowed information more or less throughout his writings makes mention of Dioscorides, which silence renders it probable that he was totally unacquainted with the works of that author. Are we then to suppose on the other hand that Dioscorides, copied from Pliny, many of the passages found in his writings, which appears to be, as it were, mere repetitions recurring in the works of the latter? Amongst which may be stated those which have reference to the use of anaethetics, and which I am about shortly to quote. Such a supposition is not at all tenable, since it appears that Dioscorides was as ignorant of the productions of Pliny as the latter was as to some of the former. Then with more probability of arriving at the truth must we imagine that both of these authors derived a great part of their knowledge from the same source, and as some have affirmed from the lost works of Septyne Niger, but from what they have written on the uses of medicines which formed the Pharmacopoeia of the ancients.
Physicians; it is probable, that they derived a great part of their information, on this subject, from the practices then prevalent amongst the followers of Asclepias in those far distant ages.

But returning from this digression, which I have made in order to gain a starting point, I will at once proceed, to trace the history of the use of anesthetics at origine prior, as far as that can be ascertained, down to our own times.

'Pliny in this chapter of the Maia,' after stating that there are two plants described under this name, 'the white, which is considered to be the male (Grec.) and the black, the female, (Pluma),' and after mentioning the pharmaceutical preparations of the white species, he proceeds to describe its medicinal actions, from which description I will quote the following passage: 'It effects a morific force in the faculties of those who drink (the prepared juice). The usual dose is half a cup. It is most usefull to techants, and before cuttings or commencings, in order that they may not be felt.'
1. Mandragora, or Mandrake, placed by
Dioscorides in the genus Atropa with the specific
name Atropurpurea. But by more recent Botanists
it is called Mandragora Officinalis. It belongs
to the Natural Order Solanaceae, and like
the other Members of that family is considered
by all as a powerful narcotic. It appears to
have been much used by the Ancients in Medicine
but is now absolutely abandoned. Indeed it is wonder-
ful that no Physiologist in the present day should have
experimented with it. "The Mandrake has had an
exaggerated reputation as an aphrodisiac, was used
in amours and in orchidations, and in fortified poisons, which
by a little contrivance was easily made to assume the
human form (the foro genital) to lead to the foolish notions
of the plant dripping when torn out of the ground. For the
Arabs the plant is called the "Safah al Obeitam" or Devil's Apple.
The best Commentators regard the Mandrake as the Constantinus
of Scripture. In which Dr. Noyes concurs. (Tindall: Vegetable
Kingdom.)

2. Vis composita pro viribus bilentianum.
Medice. postis agathie unius. Bilentian et cortea
perpendes, et ante pleurials punctualaque, one
dentitatem.

Clinic. Ρ. Σ.: libib. 25 eur. 9 a.
Here we proceed without proceeding any further in our investigation; distinct evidence of the practice of administering certain preparations of the Mandragora in surgery is far back at least as the reign of Ming, for the attainment of the very same object, as that for which Chloroform is administered at the present period. The above statement of Ming is further corroborated by that of Dioscorides, whose veracity has never been justly called in question by any critic. His great work on the *Materia Medica.* (Πάπι "Χειρικο-χήσ") being the most correct and valuable of all the ancient records, which we possess on this subject. Dioscorides devotes the 70th chapter of the 4th Book to a description of the Mandragora (μαρδαγώρας); their name he employs generically and under it he describes three species; together with their use in Medicine; and when speaking of their anaesthetic virtues, for which it was used by Surgeons, he expresses himself in the following terms:—

"True boil down the roots..."
to a third part in wine, they preserve
the juice when strained off, and administer
let the cup of it to those who are watch
ful and, and afflicted with acute
pains of any part whatsoever, and before
cuttings and burnings, when they wish
to cause insensibility (ποιησαί αναισθη-
σομαι) to pain.

In the second place he says:
"A wine is prepared from the
fruit of the root, without boiling, by tak-
ing three minims of it into an amphora of
twice wine; of this three three cupfuls
(κόλποι) are given to those who are wont to be
erythematous, as before said: for they
are thus rendered senseless by a deep sleep
and do not feel pain." 2

Thirdly, of a species of mandragora
called morisch, is used for the same purpose;
that is:
"It is stated that a draught of this
swallowed, or eaten with barley meal in the
form of a cake, or with any strong flavouring (η
in οὐρα) produces deep and long protracted
sleep. Nevertheless the individual falls
1. Είναι δὲ καθερεύοντι δι' αυτού τὰς γίγας ἄχρητον καὶ διόλαυντες ἀποτίθενται, χρίμενοι ἐπὶ τῶν ἀργυρῶν καὶ περιοδώντων κυαθῶν. ἐνὶ, καὶ ἐφ' ἂν βουλοῦνται ναϊσωθῆναι τεμορεύματι, ἢ καὶ ομενω ἐπιςαίγαι.

2. Εἰκονίζεται δὲ καὶ δίχα ἐφήσεως ὦνος ἐκ τοῦ φλοιοῦ τῆς γίγας. οὐ δὲ ἐφράζεται μὲν ἡ ἐς μεροτήν ἢνον γλυκέος, διότι τὲ οὐ τοῦ κυαθῆν τοῖς μέλλοντι τεμορεύσαι ἢ καί-σομαι, ὡς προείρηται. οὐ γὰρ ἀντιλαμβάνον ταῖς ἀθραμματος, διὰ τὸ καταφέροντος.

Πισκοίδιοι. Λιθ. 4. Τετ. 70.
astely, in the same position in which she posture of it, being deprived of sensibility, for three or four hours afterwards, and thus physicians are in when there is any necessity for cutting or applying the cautery.

Had it not been the practice pre

eminent, among surgeons, during the age at
which Dioscorides lived, to administer as an
anaesthetic; we could scarcely suppose
that he would have advocated its applica-
tion for this purpose, nor less than
three times in one chapter.

Both Pline and Dioscorides mention
the proper dose of the preparations, of the Man
dragora, to be given, and warn us against the
employment of too large a dose which
would prove fatal.

These authors when treating of the
Stone of Valphius (Lapis Nemiophenicus) mention
its application as a local anaesthetic;
showing that it was attempted by the
Ancients to produce local insensibility of the
part to be operated upon, without neces-
sarily involving the whole body.

Dioscorides remarks that the Lapis
3. **Χριστιανοί δε καὶ ταύτης οἱ ἰα- 

γοὶ, ὅταν τέμνειν ὑ καλέων με μέλλωσιν.**

Pindemus lib. 4. car. 70
Phosphates is found in Egypt near Memphis. It is about the size of a pebble, and is rich and of various colours. It is reported that this
is powdered and smeared with water on those parts which are to be cut or cauterized; they are thus rendered insensible without any danger.”

According to Pliny, “If it is used, when re-
duced to a powder, and mixed with honey-
egar, by rubbing it on those parts which
are about to be cauterized or cut off; the
matter (to be operated upon) is rendered
insensible, and feels no pain.”

This stone is described, both by Pliny
and Dioscorides, as occurring in nature.
But Isidore of Seville, in his work on the
MCXVII

From the writings of both Pliny
and Dioscorides, we are led to the conclu-
sion, that about the time of the commence-
ment of the Christian era, surgeons in
Greece and Rome were in the habit of using

anesthetics before performing operations,
and that their reason for doing so, was
1. "περὶ λίθου μεμφίτου) Λίδος μεμφίτης ευφόριστος ἐν Αἰγυπτίων κατὰ Μέρμφιν, ἐχθρὸς ψυχριάδον μέρεδος λιπαρος καὶ τυχίλας· ὁ τὸς ἱστορεῖται καταχριστικὸς λείος ἐπὶ τῶν μελλόντων τέμνεσθαι ἡ καίεσθαι τὰ ἀναστήθοιαν ἀκίνδυνον ἐπιφέρειν.”

Ulpianus lib. 6. cap. 158.

2. "Oriatur et Pentheletes a loco, gleumantio
malvae. Hujus unus contuit, et ioni, quae urure
pint lust secundar, ex acetis illini. Ablate positi
in corpore, non pludit Oricineum.”

Plutarch lib. 35. cap. 14.

Edition.
to plunder the patient exempt from suffering while they continued to operate. Where the idea or the practice of producing a state of anaesthesia in the human body, by the action of means, first originated cannot now be ascertained. But from the fact that the calpis invulturites, was derived from Egypt; it is probable that the report of its anaesthetic properties must have been derived from there also. But if Eusebius Lactantius's conjecture is correct as to its crude, we are not in a position to doubt, that it did possess such properties, which were made use of by the ancient Egyptian physicians, to whom the Greeks and Romans were indebted for much of their information as to the action of medicine on the human body, as is proved by the fact that the prescriptions which taught the use of Herbs in Medicine, were originally derived from Egypt.

The ancient Egyptians indeed were, perhaps, in the possession of powerful anaesthetics, of which we are now so ignorant as we are of the substances which
They used in the art of embalming.

In the latter part of the second century of our era Apollinus mentions the mandragora as being employed by surgeons as an anaesthetic, the water that's 'of any one must have a member mutilated, cauterized, or torn off; let him drink half an ounce of it in wine, and so long as he shall continue to sleep, during that time the member may be cut away without any pain or sensation (being felt by the patient)'.

Beyond the testimony of the author now quoted, I am not aware that we possess any further evidence to prove the employment of anaesthetics in surgery, amongst the Greeks and Romans. But in a paper lately addressed to the Academy of Sciences Mr. Stammler Julius has shown that among the Chinese 1500 years ago—or in other words in the third century—a preparation of Indian hemp (Cannabis indica) was used to produce insensibility to pain during surgical operations. This curious piece of information, he derived from the Great
1. "Utiam si aliqui alicquod membrum juris
emulsiusque, combustusque, pot terranctuar,
liber cum vino mecum aesteam, et cantus
tormieer, quonque absintaturn membrum
aliquo fine dolore et tenua."

Liber Medicaminius Herbarum
De Mandragora, Cap. 129.
Chinese work, entitled: "Kou-Wo-J-Tang"

The Compilation of Ancient and Modern Medical

Wine," published A.D. 1000. In this case
it is stated: "When Mou-Shao knew that
it was necessary to employ the acupuncture,
he used the needles in two or three places
the Moxa being applied at the same time
as it was indicated by the nature of the
affection, which he had to treat. But
if the complaint is situated, upon parts
upon which the needles cannot produce
any action, for instance, in the bone,
stomach, or intestines, then may be given
to the patient, a preparation of Hemp
(Boa-yo) and in a very short time he
is rendered so indifferent, that he appears
to be intricated in the spring of life, that
according as the case may be, the opera-
tions are performed of amputations,
&c and the cause of the malady is rec-
oved. Afterwards the tissues are brought
together by sutures and liniments are ap-
plied. After some days the patient
is restored to health, without having
felt during the operation the least
The interesting fact would lead us to suppose that the properties and preparations of the Indian Drugs were known at a much earlier period than is generally supposed by those who have written concerning its history.

It appears from various authorities that in the ancient temples, dedicated to the worship of the gods, anaesthetic drugs were administered to the priests in their performance of certain of the ceremonies connected with the Mysteries of Eleusis, and that the supposed interviews which the aspirants to initiation into the priesthood had with the gods, were nothing more than the dreams which the drugs excited, the mind being previously possessed with the conviction of being allowed such a privilege.

The aspirants to initiation, and those who came to demand prophetic dreams of the gods were prepared by a feast more or less prolonged, after which the parts of urinals expressly prepared
Claver, Mémoire Sur les Brasiers.
Isaiah Salterter, Phlegmody of Magic Vol.2.
And also of Mysterious Drinks, such as the
Water of Delipher. Drugs were easily mixed
with these, so that they were secretly ad-
ministered to those individuals without
ever exciting their suspicion. The Ameri-
cans took quick and glib, of which they thus
parroted, caused them to fall into a loud
and prolonged sleep. On their awaking from
this, potions were administered to them
in order to procure them dreams. Afterwards
the priests demanded of them to relate
whatever they had seen or heard.

To illustrate this, we present a descrip-
tion, handed down to us by Plutarch, of
the Mysteries of Thesphonius. (Whose case
was one of the most celebrated among the
Egyptian Bacles) as related by Timarchus,
who passed two nights and a day in
the grotto. When the apparitions began
to appear, Timarchus stated, that he ex-
perienced a violent headache, and when
they began to disappear, the headache
again returned. From this account which
Timarchus gave of himself we readily
perceive that he had been subjected to
1. La Escuela Salomón 40 2-1-2.

2. Plutarco de Palomino Sánchez.
The action of powerful drugs, which caused
the symptoms he experienced. The head
ache in the first instance must have been
due to the action of the drugs composing
and the recurrence when he began to
regain his reason, must have been due
to their effect beginning to be dissipated
also. He lived three months afterwards
in consequence, probably, of their effect.
The energy of these drugs, employed by
the Priests, was, doubtless, also the cause
of the pallor and the reaction, always
observed in the countenance of every
applicant on his return, from this
oracle. Hence it became proverbial,
—"Pay, or a Pallid and Pale Man, that he
had visited the Oracle of Tyrconnels.

Thus it would appear that kings,
entrusted with powerful anaesthetic
actions were known among the priests
during the reign of Polytheism. The
secret employment of which could
not fail to gain them great ascendancy
over the minds of the superstitions and
ignorant, and thus assist them in main-
Drying them craft.

From the Arabian Nights later which, though, in themselves, petitions, are the most correct representation, which we possess of the manners and customs of the Arabian we learn, that the secret of inducing insensibility and loss of consciousness, by means of drugs was well known amongst them. For we have it stated that a young Prince was cast into sleep every evening, by the juice of a plant; his hours continued throughout the night to prolong, but he was not aroused from the sopor into which he had fallen, until in the morning a perfume was applied to his nostrils. 4. In the two hundred and ninety-fifth Night we are told that Alian Hakim, wasrendered insensible, by means of a soporific powder, which had been administered to him, and whose effects were destroyed by passing a strong solution in vinegar under his nose, which caused him to sneeze and vomit after which, his hands were
Arabian Nights. Night XXVI
pudibly restored. In another part of the same tale, we have it related, that a young Princess was put into a deep sleep by a narcotic drug, and that she experienced the same symptoms as Aben Halcan did from the effects of the Monge, when she was carried out into the open air.

Thus we perceive the Chaladians have been long acquainted with drugs capable of producing a state of anaesthesia; and that they used them frequently, in stupefying for a while the senses of individuals; in order to deprive them of their power of observation, and their will to economise themselves, whereas they might choose; it is highly probable that they would employ such means in Surgery to alleviate human suffering. But not being sufficiently acquainted with the literature of the Chaladians, I have not been able to adduce positive evidence to prove the truth of this conjecture.
Substances endowed with the power of rendering insusceptibility to pain, and hardihood to endure torture have apparently been used in all ages by the Hindus. It is only by supposing, with Dr. Barthelemy, that religious fanatics, everywhere to be seen in Hindostan, made use of such, that we can understand how they are able to withstand the most inhuman tortures and tortures which are almost beyond the power of human beings to endure. The historians of Greece and Rome, says he, "have spoken of them, and national traditions state their practice to have existed from the commencement of religious civilization. The patience of men in submitting to them, most probably, has resulted from the causes we have already pointed out, namely, the actual use of such frightful things. They repeat it often, and this practice thus prolonged lasts in perpetual terror, and enables the fanatics capable of supporting tortures that last their lifetime. Consider ing the length of time during which the laws of many of these miserable wretches are pros-
1. Solinius, chap. 55

consequent; we cannot imagine how they are pre
vented from finding under the tortures which they impose upon themselves, were they not rendered capable of suffering by drugs calculated to produce such an effect before that.

In Hindostan has existed from an
tiquity the religious ceremony of burning widows upon the funeral pyres of their husbands. It has been ineffectually at
 tempted by the Indian Government to put down these shameful immolations. Even in 1825 the number of these shameful
consecrations amounted to 164 in number.
When the woman once consents to this
funerary ceremony, she cannot recant; and when any unwillingness is shown on
her part, and her relations have anything to gain by her death, she is rendered
incapable by an anaesthetic beverage, and thus compelled to submit. The practice of
mugging those unfortunate creatures to in-
duce their destruction appears to have been so
still it is very common. I will quote the testi-
mony somewhat interesting of an eye wit-
ness to one of those inhuman sacrifices,

copied from the Asiatic Journal. The writer in a letter dated July 1, 1822, states what he saw as follows: The preliminary ceremonies, if any, must have taken place previous to any arrival at the ghaut, for I found the unhappy victim of their idolatry in a perfect state of insensibility; her eyes were open, but apparently beyond the power of recognition of surrounding objects; she remained until a paper was read by several Brahmans, who eagerly pressed upon the person in whose hands it was. ** The corpse (of her husband) being laid upon the funeral pile, she was raised from the ground, and supported to the river, and after being bathed (for to bathe herself was beyond her power) ** the was supported around the pile three times, and after having performed her task, her head fell on the shoulders of the man on her left hand, and for upwards of ten minutes, she was in a state of insensibility; but in the sequel I was satisfied that the drugs which had been given her had begun effectually to operate. ** The attendants waited this time
I suppose in the hope of her reviving, and being able to show somewhat of voluntary action in the sight of the seven European gentlemen, who happened to be present, but in this they were disappointed, for she remained perfectly inanimate to every object, and now commenced a scene so horrible, so revolting to every common principle of humanity, that one blood-thundered at the recital. They lifted her up more dead than alive and placed her on the pile; she had not the power when on it to lay her arm on the body of her deceased husband, but this quickly done for her, as well as placing her head on her bosom: this was enough for me to see, and I left the scene of murder; for no other term could be applied to this "infernial transaction" owing to the indescribability into which this unhappy sufferer was thrown; it may be said that she was merely passive in the act, and that the part of the demoniacal ceremony could have gained her consent.
The employment of anaesthetics for such purposes, lay a nation to well skilled in the actions of Drugs, as the ancient and modern nations is not to be wondered at. The drugs of this nature used by them, being chiefly prepared by the Indian tribe, whose properties they were com-

Haring now endeavored to trace the history of the use of anaesthetics, amongst various ancient nations, for surgical and other purposes. The question which arises when were the substances which they employed. It appears from all that we can ascertain on this subject that they em-

ployed powerful anaesthetics, and that they administered them in doses suffi-

cient to produce insensibility but short of fatal anaesthesis. Many of these anesth-

cies used are undoubtedly unknown to us, but amongst those known to have been em-

ployed may be enumerated—Opium, Hy-

stremon, Ava, Drabanor, Bland Monroe, Bia-

furin. Eparlaylucfubon, and others not-

less energetic. The administration of these
in 1820 sufficient to occasion anaesthesia could not have been attended with danger to life. This is undoubtedly the reason why their employment in surgery was rather restricted in ancient, and altogether abandoned in modern times.

For several centuries during the dark ages we lose sight of the application of anesthetics in surgery, in the same way as we do of all the knowledge which the ancients possessed. But we can, here, trace their employment in worried craft known as a bath entitled, in the shape of ointments or liniments, which appear to have been indispensable to the members of that profession. Surgery indeed was the only art, but it may be as learnedly showing the proper, which, together with superstition, pleased this characteristic. But after the cultivation of letters began to be planned, and a knowledge of the truth about self-mutilation thereby consequently fell to the ground like every thing else established without a foundation.

The opinion has already been
Supposed, that owing to the tendency which
incantations have to produce dreams, they
were used in the ancient temples. That employment
for the most part formed a peculiar feature in
what was termed sorcery, we have abundant
evidence to prove; from the writings of Plutarch,
Oviedo, and others, all of whom agree
upon this point. Those authors who paid
much attention to this subject, state that
sorcerers nodded certain ointments into their
bottles, from the action of which they were
deeply thrown into a sleep, which accelerated
the predominant emotions of their minds
could cause them to dream, of being transported
to the Sabbath? But those who and they
mistook for realities, and thus deceived
themselves as well as those on whose credi-
bility they practised, for when they
were they firmly believed and asserted,
that they had personally attended cer-
tain ceremonial processions, and that
through the magical agency of those
ointments they had been transported to
where they occurred. The witches knew
not that they had lost credit, and that
1. Those who are curious about knowing the practices of sorcerers refer them to the following works which they may consult:
J. Baptista Porta, Magia Naturalis, Trans. I. Needham, F.R.S. p. 552, 558, 569; J. Dumas
de Kastrique, Elison. Lib. IV. cap. 30. Cardan, de Subtilita, lib. XVIII.

2. The Sabbath was a place selected where the Sorcerers, Sorcerers, & Clowns assembled in the nighttime.
These informal possessions had an effect
which in their turn produced another;
and that it was greatly influenced by
the influence of allusion, as was proved experimentally
by the authors already quoted. The out-
woods which they used, for the purpose being
so powerful that their effects were extended
despite whatever could destroy the sleep
which they induced. The individuals under
their influence being as susceptible to pain
as they were to every other unrelenting at-
pains. These sentiments are supposed to have
contained opium and other narcotics. Various
receipts are found in the books of the Alchemists
for preparing them. To illustrate what I
mean, I have cited. Whitehead and others might be quot-
ed from the works of the authors to which
I have already referred. It must be con-
templated that witchcraft had an existence;
although those who practiced it had, it is
true, for superhuman powers; their art was
essentially an imposition upon the credulity
and superhuman of the ignorant, although it was
often imposed upon themselves. The means
which they used played for the attainment of
Their purposes were productions of nature, but which they pretended to have derived from another world. They were not to be blamed for their pretensions to an acquaintance with the minds of the most active nature, and which they were ever ready to put in practice, when it suited their purpose to do so. But they also had an equal knowledge of substances which attended the insensibility, and hence hardship to pain became a test for decency and witchcraft.

In proceeding onwards towards our own times in search of the use of anaesthetics in surgery, we arrive at the thirteenth century, before we are arrested with any notices having been taken of this subject. But in the Surgical Treatise of Theodore (a pupil of Hugh of Lucca, who died in 1298), written during this century, a

recipe is given for preparing a watery extract, the purpose of which is to be inhaled before surgical operations to produce insensibility to pain. This extract
he calls "Conforto uprisis a chirurgica praxis, \vindicta Scultorum Dominorum Hugonum."
I will quote the following curious passage taken from his work: "Take of Opium and
the juice of the mirific mulberry, of hippocras,
of the juice of the hemlock, of the juice of the
leaves of mandragore, of the juice of the
wood ivy, of the juice of the forest mulberry,
of the seeds of the lettuce, of the seed of the
burdock, which has round and large apples,
and of the water hemlock, each in
ounces; mix the whole of these together
in a beaker vessel, and then in its place
a new canteen, and let the whole boil;
and as long as the time on the big hours,
till it (the canteen) contains it all and
let it be boiled away in it (or, in other
words let the watery leachate be formed).
As often as there is need of it, place this
same leachate into water water for the times
and let it be applied to the most vile till
he who is to be operated upon (qui inci-
clusus est) has fallen asleep, and in
this state let the operation be performed
(let sic fieri chirurgia). When this is finished,
ed, in order to louse, place another sponge dipped in vinegar frequently to his nose; or let
the juice of the roots of the feignâte be squirted into his nostrils. Presently he awakens.

Senses being informed by Semeleic that
Surgeons in this time used anaesthetics, we
are shown likewise that the substances em-
ployed by them were inhaled into the lungs
in the shape of vapour.showing that long be-
fore the 19th century our ancestors were impressed
with the idea that remedies of this nature acted
more readily by entering the system through
the medium of the lungs. It is also curious to ob-
dare that from this period, it has been the
object, in producing complete anaesthesia by
the action of drugs, to do so by the inhalation
of them, and not as the Ancients did, by
introducing them into the stomach. But we
are not to infer from this that the ancients
were unaware that powerful effects could be
produced upon the body, by the flames or a-
ports of volatile substances. Herodotus states that
the Egyptians were in the habit of inhaling the flames pro-
duced by casting, upon heated stones, the
Pliny 2 and Dioscorides 2 state that
those who smell the berries of the Mandrago-
ora immediately fall asleep. Celsus mention-
also that some, are in the habit of placing
them beneath the pillow of those affected
with Hysteria, in order that by their
 przecific power they may induce sleep (e.g.
Mandragora as male pulvisco pulvinarius).
This it would appear that the ancients placed
great faith in the soporific power of the mandra-
gora. Many other instances might be quoted to show that
the inhalation of certain things was practiced
amongst the ancients.

Celsus, in his book of "Quintius"
published in 1538, has reintroduced the
soporific confection of Theodosius, already
quoted, to which he appendix some additional
remedies. Showing that, when anaesthetics
were still employed, 'true surgeons like
Theodosius', he remarks, "give to these pa-
tients soporificous medicines which cause them
to sleep, so that they may not feel the
incisions as opium, succus morellae-
hyoscyami, Mandragora, cictae, lactuces;"
they dip a sponge into them, and allow it to dry in the sun. When they want to use this thing, they moisten it with warm water, and hold it under the patient's nose until he falls asleep, and then they perform the operation. They afterwards pour him, by holding to his nostrils another sponge, dipped in binegar; or else they put into the nose or ears the Queen's powder, and thereby make him so they relate. Others cause their patients to drink euphorm, whereby they are particularly if they beggar wrong, for they are to be routed with difficulty, and I have heard that mania and death may follow."

The celebrated French Surgeon Ambroise Paré, who lived in the 16th century, in his great work on Surgery, Druses of the Mandragnia thus: "When the Mandragora is parted off somewhat freely, not only from the root, but also from the fruit, it induces a long and profound sleep, with cessation of mind and relaxation and torpor of the body, so that after much disturbance of the viscera system, those who have taken it fall asleep in the same position in which they are seized as if..."
by lethargy. Thus surgeons were formerly in the habit of exhibiting mandragora to remove the pain attendant on the amputation of a member. 4

Prokhorov states in his natural magic,
when treating of medicines, which produce sleep, observes that “Pharmaceutical peculiarities are very requisite to be placed amongst these accidents, and are of very great esteem among physicians, who by sleep are wont to ease their patients of pain: and are of less account among captains and generals where they practice stratagems upon their enemies.” 2

In the same chapter he reproduces the statements of Pliny and Dioscorides concerning the employment of the mandragora, as an anaesthetic. Then he proceeds to mention:

“A wonderful way to make one take a sleeping medicine in his sleep. These things” says he “which we have already spoken of, are easily discovered after sleep, and bring a suspicion along with them. But out of the many of the aforesaid mundane medicines, they may be extracted as an incensarium which must be kept
in leaden vessels, may closely that it may


3. These are Opium, Mandragore, Juice of Hemlock, Seeds of Hydrastis, Nightshade etc.
Not have the least merit, lest it should fly out. When you would use it, uncover it and hold it to the sleeping, thus and the sleep will not break up the subtile essence, which will to deceive the castle of his senses, that he will be overwhelmed with a most profound sleep, and to be done off without much labour. After sleep no heaviness will remain in the head, nor any suspicion of cast. These things are a true "test to a wise physician; is a wound before disease." How much better this description resemble the intimation of ether by means of an apparatus. The fact that this quinainance was administered during sleep is also sufficient to show that it was employed as an anesthetic, and not for the simple purpose of inducing sleep. The hollow vessels were much in the practice of preparing quinainace by distillation. The different processes for effecting which are elaborately described in their works, (see Baptista Porta in Distillations)
It may not be out of place, as stated
that Shakespeare and other tragic writers who
followed him, occasionally in their works, al-
dude to the hypnotic power of mandragora
and the employment of anaesthetic unguents.
For instance, when the Friar gave

to Juliet the drug which was to cause her
to lose all her senses, so that she might be-
come as if in death, for a considerable length
of time, he addressed her thus:

"Take now this phial, being then in bed,
And this distill'd liquor mix'd in it; thou 
shalt, when presently through all thy veins shall run
a cold and drowsy humour, which shall prise
Each vital spirit; * * * *
And then awake as from a pleasant sleep."

Romeo & Juliet

The following passage occurs in Cymbeline:

"But here is
A stanza of what thou of sleepst it makes,
More than the looking up the spirits a time,
So to come fresh revising."
During the absence of Antony, Cleopatra says: "Give me Mandragora. That I may sleep out this great cup of time."

Middleton (who wrote after Shakespeare's time) in the tragedy Of Woman Beware Woman says: "I'll imitate the practice of old surgeons to this last limb – who, in the show their art Cast one as sleep, then out the dis eased part."

The Mandragora seems to have been a favourite plant amongst the poets and tragic writers. Webster in his Queen of Malbry speaks of it thus: "Some one as Mandragora – that I may sleep."
The method of producing anaesthesia by inhalation, either by the Morin method, or by
the "Gorgia Morina," of Théodore, cannot have been widespread, and occasionally practiced
even at or late a period at the beginning of the
18th century; as appears from the anecdote, re-
lated by Melleier in his "Médecin, concern-
ing Augustus the first, King of Poland; who had
his foot amputated by a French Surgeon,
named Weitz, who, secretly, plastered the king
inaccessible to pain, by applying to his nostrils,
while he slept, a volatile anaesthetic; this
enabled him to perform the operation without the
king knowing it. The account of Melleier is as
follows: Augustus I. had for a consider-
able period, suffered from a wound of the
foot, which threatened to mortify. A con-
templation was held among the court Surgeons,
throughout whom the King's favourite Surgeon,
Weitz, a pupil of the celebrated Petet of Paris,
was consulted. He declared, as his opinion that
the foot was commencing to mortify,
and therefore it was necessary to amputate
it immediately. All the court Surgeons were
opposed to this, and eagerly advised the King
A. A. Gottlieb Meissner, whose "Studien" or "Neben", were published at Erlangen: A.D. 1782.
to send immediately for Reset. Augustus followed
their admonition and sent for Reset to come
with all haste. In the mean while Weiss le-
yan to fear that, if the amputation of the foot
were delayed, the result might be fatal to his
sovereign. Accordingly one night, at the rule
of his own life, while the king was sleeping,
he administered to him secretly some power-
ful drug. This produced a profound
sleep and complete insensibility, and while
the king remained in this condition Weiss
amputated the diseased member. The king
left the commencement of the operation, before
the king had produced its full effects, should express
that something was going on, but being told by
the surgeon that he was merely dressing the
wound, he was pacified, and then fell asleep.
However in the morrow the patient demand-
ed to see his wound, and then this-
elocly, that a portion of the foot had been
removed; he indignantly demanded the reason
for such procedure, but was soon satisfied
with the explanation which Weiss gave, and
feeling grateful for the courage and ability
displayed by the young Chirurgion, and being
Atured Sir, Tobacco boy to be brought to him, he therein described the portion of the foot which had been cut off, placing the boy in the hand of the Surgeon with the swiftest inunctions to proceed. Prit as long as arrived from Paris, and a communication of the most imminent of the Folly, immediately sum-summoned; but on the particulars of the case being related to him. Prit at once pronounced that speedy incisionation was necessary, and expressed astonishment and sympathy that it had not been already performed. This quick and unexpected hint filled the greatest number of the assembly with sympathy, while it instilled confidence and courage into the mind of the young and active Surgeon, who then stepped into the midst of the circle, and presented the gold box and its contents to his invaluable master. Behold, said he, the fruits of discipline; the merit, if any, belongs to you, for I have learnt still by your lessons of instruction, and boldness in danger, by your example.
Having now traced the application of anesthetic means in surgery, from the commencement of the Christian era, up to the early part of last century, from which period their employment had, apparently, all but then abandoned by Surgeons until A.D. 1844. I may state that I have adduced all the evidence that I have been able to collect, which, indeed, is by no means sufficient to prove that the practice of inducing artificial anæsthesia, by such means, is truly on that era. Abundantly a more Genealizing means into the works of the ancients, would yield, for our information on this subject; but that would only tend to corroborate some facts, that which we already know. That anæsthetics should have been so long used by Surgeons is not at all surprising that the insuperable degree of suffering produced by surgical operations on the human body, has always been one of the greatest objections to their performance. And for this reason as much as for the danger which, many of the incur to life, they have ever been looked upon with horror; and indeed, by the world. Thus Surgeons to enable their art more proficient, and beneficial to mankind, must have ever strained to find them.
places in the possession of a power, which would enable them to operate without, at the same time, being the authors of agony and anxiety. Indeed, it is far more surprising that surgeons, in modern days, should have been so long in endeavoring to improve upon the knowledge which their predecessors in former times possessed, as to the use of anaesthetics, especially so when a mere glimpse into the records, which they have left behind them, might have been instrumental in eliciting, what course to pursue in order to discover what substances are endowed with such qualities, whose employment, as used at this day, would have saved an amount of human suffering far too great to be within the scope of our comprehension. 

Were we to examine the works of the ancients more attentively than we are now do, we ought perceive hints that would lead to discoveries which are at present never dreamt of.

But it has been the fate of surgery as well as that of Quantrill, that artificial anaesthetics should have been entirely forgotten, as unworthy of notice, having no
period, in which our professional knowledge has been rapidly advancing. But as it has been again revised and far more perfectly than before, by the discovery of new agents more appropriate for its production, to mitigate human misery; we naturally enquire who those individuals are, apart from the crowd of the medical profession, that have by the discovery of such, effected so great a revolution in our former practices, whose discoveries and labours have rendered them illustrious, by conferring upon the world so important a blessing; as to gain for them the gratitude and esteem of every class of society from the highest to the lowest. The inquiry how this can only be answered by a brief sketch of the revival of anaesthesia [i.e., the use of anaesthetics] and the improvements which it has since undergone up to the present time.

The history then of the revival and progress of anaesthesia, commences with Mr. Horace Wells, an American Dentist, who resided at Hartford in the State of Connecticut.
This gentleman, to quote his own words, "was led by reasoning from analogy to believe that surgical operations might be performed without pain, by the fact, that an individual when much excited, by ordinary causes, may receive serious wounds without manifesting the least pain; as for instance, the man who is engaged in a controversy may have a limb bitterly from his body; afterwards he testifies that it was attacked with no pain at the time; and so the man who is intoxicated with opium or spirits may be healed severely without his manifesting pain, and his frame in this state seems to be more susceptible of life than under ordinary circumstances." Being possessed by this idea, he was induced to try if the same effects would not result from the inhalation of nitrous oxide, generally called laughing gas. This substance was dis-covered by Priestley and studied somewhat intently, as to its physiological action, by Sir Humphrey Davy in 1800, who try in testing it for a certain time found that it stimulated the nervous system powerfully.
so as to produce a peculiar kind of intoxication without being followed by any ill effects. After Dr. Despoix had made these experiments he also looked that it "might be found useful in allaying pain during surgical operations." In November 1844 Mr. Wells communicated his experiments with the laughing gas, both in taking it himself and then having had a patient inhaled under its influence, and without suffering any pain from the operation. After this trial he repeated the same experiment on twelve others, and in all (as he asserts) with the same good result. Thus he made the important discovery that nitrogen oxide gas is an anaesthetic. Mr. Wells then experimented upon sulphuric ether, which had been known since 1795, as a powerful antispasmodic in the treatment of asthma when inhaled in the shape of vapour. This also he found to be equally powerful as an anaesthetic when inhaled in sufficient quantity. He however gave the preference to nitrogen oxide, and abandoned the employment of ether or being (as he thought) productive of disagreeable symptoms. It was unfortunate, that he should have preferred the nitrogen oxide, be-
Of its gas-like form being an impediment to its employment as an anaesthetic. But still Dr. Wells was correct in his opinion. Thinking that laughing gas did in its physiological action preferable than ether we have the opinion of Prof. John Draper, who placed in one of his lectures, as his belief, that if substances which could be procured in the liquid form it would undoubtedly prove the best anaesthetic that we could possibly employ, but that while it can be obtained only in the form of a gas it will never be used as such. Indeed no gas-like substance is likely to come into practice as an anaesthetic, while we can procure an article of that nature, in the shape of a highly volatile liquid. This is owing principally to pre-agitation, gases being of lowering them from place to place owing to the bulk which they occupy. Besides they are subject to great waste and difficulty in administering them by inhalation.

After having made his important discovery Dr. Wells left Hartford for Boston, where he communicated it to the Medical Faculty, first making it known to Drs. Warren, Hayward, Jackson and Gurdon. Dr.
that time all these gentlemen declared that the
Anodos Omaaikos was new to them. Dr. Warren
then invited Mr. Wells to address a lecture
on the subject to his pupils, which he accordingly
held in the anatomical lecture room. At the
end of his lecture, Mr. Wells administered the laug-
ing gas to a man, from whom, at the same time
he extracted a tooth. But as the inhalation of the gas
had not been continued long enough, the man
declared that he had felt some pain during the
operation. In account of this partial failure
the lecture was considered, by the students, to be an
impropriety. And as the man was inclined to assist
him further in making experiments. This unfor-
tunate occurrence acted so powerfully on the
mind of Mr. Wells that he was seized with
a severe illness from which he died after
pleasure. Practically for many months, which
compelled him, from this period, to abandon his
professional pursuits. For this reason and
because the profession in America would not
cooperate in assisting him to establish the
employment of anaesthetics in surgery, though
a plan that some serious accident might
result from their use, the discovery of the

Wells was not applied practically, except by
the students at Hartford, in extracting teeth,
until two years after it had been made pub-
lic, when it was fortunately turned to the im-
portant advantage in alleviating the sensa-
tion of pain in the major operations of surgery.
As Dr. Wells still continued to aban-
don his usual occupation; Dr. Morton of Bos-
ton, in former years, applied his skill at Hart-
ford, in order that he might become instructed
in preparing and using nitrous oxide, be-
having with skill to try it in Boston, for the
production of insensibility to pain. Dr. Wells,
refused him to Dr. Jackson as a chemist
capable of showing him how to prepare this
substance. Dr. Morton, after applying to Dr.
Jackson for the required information,
was at length induced to try ether, by his
advice, as being more easily procured and admi-
stered. According to the counsel of old, some experiments
were made by extracting teeth; among the anaesthetized
by allowing them to inhale the vapor of ether. These
trials being successful, he then introduced
it into the Massachusetts General Hospital
on the 18th and 19th of October 1846, when
Lanceet 1847 Vol. 2 p. 80
Some capital operations were performed under its influence and with the most happy results.

From these facts already adduced, we are shown that for the removal of the employment of anaesthetics in surgery in the noon times the palm of originality belongs to Mr. Horace Wells, and not to Dr. Wells, the merit of having first applied them to the capital operations of surgery, and consequently for having advanced considerably the employment of such agents. But notwithstanding this, Dr. Jackson considered himself justified in getting Dr. Morton to act with him in an agreement with him, in which it was certified and agreed to, that they would in partnership share the equal division to the discovery of blundering operations painless. In this agreement the name of Mr. Wells was never mentioned, as his previous experiments ever adverted to; he had left America and had sailed for Europe before Dr. Morton commenced to experiment upon ether. And therefore, it was not until after his voyage was completed that he became known.
But Dr. Morton & Jackson had laid claim to the original discovery. The written contract between these two gentlemen, was signed and executed on the 29th of October 1845, from which the following extract is quoted:

If all persons to whose these presents shall come: Whereas J. Charles E. Jackson, of Boston, in the State of Massachusetts, Chemist, have in conjunction with William J. G. Morton, of said city,Albertist, invented, or discovered, a new and useful improvement in surgical operations on animals, whereby we are enabled to accomplish many, if not all operations on animals, without the use of indulgent, or unnecessarily, hence are enabled to accomplish many, if not all operations, such as are usually attended with more or less pain and suffering, without any, or with very little pain or muscular action, to persons who undergo the same, &c &c. They also certified that the discovery had not been before made. But Dr. Jackson was still left farther by expediency, the bill went so far as to

And, privately, letters to London & Paris to be read in the general academies, in which they took

All the credit of the discovery to himself.
Lancet 1847 - Vol. I. p. 472
without even condescending to mention the name of his partner Dr. Morton. Thus in a letter to Dr. Bloomfield of Paris he states that “five or six years ago, I remarked the peculiar state of insensibility into which the nervous system was plunged by the inhalation of the vapour of volatile ether.” This conduct of Dr. Jackson caused a quarrel between him and Dr. Morton, in consequence of which they both (and very justly) deemed that the other had any thing to do with the discovery. While, therefore, they were thus disputing “inter se” like the Divine and the Tyro mentioned by Voltaire, Mr. Wells laid his claim before the public, which has been, with justice sanctioned by the common consent of his fellow Countrymen.

After the employment of Ether as an anaesthetic in America, became known in Europe, it began to be extensively used in surgery in many of the Hospitals both in Great Britain and Ireland and on the Continent. But its employment was confined exclusively to surgery, until Professor Simpson began to think that it might be used with as much advantage by the re-
conclude in prescribing entirely the pain accompanying parturition. He had at first only one plan, consisting in its employment, namely, that a state of anaesthesia would suspend the action of the uterine, the active agent of parturition. Professor Simpson had a patient in Edinburgh under his care, with deformed pelvis, whose accouchement was daily expected. In this case he had pre-determined to extract the child by turning, and as it was attended with, whether in this instance the uterine contraction should be submitted to or he resolved to anaesthetise her with ether. Accordingly he did so on the 19th January 1849, and with the happiest results both the mother and child. In this case Dr. Simpson discovered that not only was anaesthesia safe to the mother and the child attending parturition but also that it did not at all interfere with the action of the latter induced to too great an extent. In the following week he used etherisation in critical cases of natural parturition, and with the very best effects, his patients expressing their gratitude for having been led by his lu-
pleasures arose from undergoing so great an amount of suffering. Posthumous standing this important improvement, and revelation which he affected in obstetric practice, an improvement which no one before him ever dreamt of; yet by many and especially by certain members of our profession, who ought ought to have than they knew, he was unjustly and dishonorably accused, and phisicle arguments were brought forward with the object of proving that idiotcy and Hydrocephalus would prove to the child because of the mother being anaesthetized before and during its birth. These were strange specielies indeed to be advanced; but not more strange than fallacious. Religious and moral objections were also invoked to put down anaesthesia in midwifery; but these have proved themselves to be far worse, to more logical than the then, valid, and reflected in those who advanced them.

However, he became keenly competent of judging between right and wrong; either he

The sooner he extensively used throughout Europe and America, to soon as Professor experience, with it, became circulated abroad.
In London Ether was employed in midwifery first by Dr. Hugheson on the 13th of February 1847. In Dublin on the 28th June of the same year by Dr. Tyder. But this new practice spread more rapidly to the Continent. In France it was resorted to by Trouvère Nochamps on the 27th of January, and on the 8th of February by Professor Dupre at the Hospital de la Maternité of Paris, and up to the 23rd of Feb. he had used ether in four other deliveries. The first case of anaesthetic midwifery in Germany occurred in the practice of Professor Martin Ern of Jena on the 24th of February 1847. Lastly in America ether was applied for the same purpose on the 15th May 1847 by Dr. Channing, professor of midwifery in Harvard University.

Although the advantages gained by the employment of ether as an anaesthetic in surgery & midwifery, were incalculable; yet as an agent of this nature is was not without its disadvantages; and thus a substance more preferable was discovered. This actuated Professor Simpson
1. See Dr. Simpson's Report of the early history and progress of Anæsthetic Aid.
to let his active mind in operation to discover one; he commenced experimenting upon many volatile organic products; at the same time inhaling many of them himself at the risk of his own life; at length he happily hit upon chloroform, which he found to be the most efficacious, safe and agreeable of all anaesthetics yet discovered. This volatile liquid was first discovered by Somnian (1831) and a short time later by Leriche (1832); it had not previously to Professor Simpson's experiments been inhaled in the shape of vapour. It had been administered by the throat to rabbits and injected into their veins, by Dr. Glaner of Newcastle in 1842. This gentleman found that it produced, in these animals, violent inflammation which always terminated fatally. If these experiments Professor Simpson was totally ignorant; or, otherwise, he would not have, probably, been induced to try its effects by inhalation on the human body. After making his discovery, Professor Simpson introduced chloroform into midwifery on the 8th of Nov. 1847 and has continued to employ it extensively since.
Since, in his practice, without the occurrence of a single fatal accident, although the opposite has been asserted by those who are opposed to its employment.

Chloroform as an anaesthetic was first made public on the 15th of November 1847, on which day it was administered to three patients who underwent operations in the Surgeon Hospital in Edinburgh. Professor McLean operated on the first two; the one being a young boy fourteen years old, who had a necrosed portion of the Achilles of the arm removed; the second, a soldier, with a diseased portion of the lower jaw, which was also removed. The third was a young man from whom Dr. Duncan had perforated a diseased toe; he in particular was rendered perfectly insensible in the short space of half a minute. All three were perfectly anaesthetized by a very small dose of the Chloroform which Professor Simpson administered to them; by the aid of no other instrument than a handkerchief or a sponge.

To witness these operations a large crowd had collected, which f...
left the Operating Theatre, comprised of several gentlemen professional and more professional together with a large body of students from the University amongst whom I was fortunate enough to be placed. From the Court Fire that may be mentioned the houses of Professor Ouassar, the first investigator of the chemical composition of Chloroform, and Dr. George Edwards who were staying in Edinburgh at that time. All left the scene highly delighted, and all at the same time satisfied that the discovery of the anaesthetic action of Chloroform is one of the most important that ever occurred in medicine; a discovery which has led, further than any other, to perfect one of the two great indications which the healing art fulfills, namely, the mitigation of human pain and misery. And of the second indication which is: to make life not to face advanced as the other, this defect is owing to the circumstance that man is mortal.

Abelman morti nos mortuam esse

and it is bilete to be infected with these cases, to remove which are efficient power...
I. Horace liber de arte poetica - 03.
has yet been revealed to us.

After its first introduction Chloroform rapidly displaced ether as an anaesthetic agent, so that the latter is now almost entirely abandoned for such a purpose. This preference in favour of Chloroform is owing to its possessing numerous advantages over ether; amongst which may be specified the following: 1. Its action on all is certain. 2. Its action is far more rapid, perfect and persistent, and thus a much less dose is required. 3. It is far more agreeable to inhale than ether, and does not like it, produce any irritation of the air passages.

Chloroform has thus given a new impulse to the progression of anaesthesia, and has thus gradually gained ground; and still continues to place itself in the confidence not only of the profession but also of the public.
The Anaesthetic Application of Chloroform

It is now well-known that extensively, and with what good results, chloroform is employed to produce anaesthesia both in surgical and obstetric practice; in both of which departments of the medical profession it is equally beneficial; in the first instance, before surgical operations to prevent the patient from experiencing excessive suffering from them; and in the second, during parturition to obviate the pains of labour.

Without entering into a detailed account, which would be far beyond the scope of a thesis, of the special applications of chloroform in surgery and midwifery, it will be sufficient to state, why its action when inhaled, proves to be so useful; or in other words, the most important indications where its employment may be. There are as follows:

1. It produces complete insensibility to pain, and a state of unconsciousness to external agents. This condition is termed anaesthesia.

2. Its anaesthetic action, when administered judiciously, and to a proper dep
but, is attended with perfect safety.

3. It produces complete relaxation of the voluntary muscular system, and thus may greatly facilitate the reduction of obstructions, and the performance of many other operations.

4. When the anaesthesia, which it induces is not too profound (but sufficiently so to fulfil the previous indications), it does not affect the reflex organic functions; that is to say, the action of the involuntary muscular system, and thus does not at all interfere with the action of the uterus, but rather facilitates labour with safety to both mother and child.

5. It preserves patients from the shock of severe surgical operations, and thus often saves their lives; not only from their immediate, but also from their subsequent effects of pain.

That chloroform produces complete insensibility (anaesthesia) no one can, for a single moment, doubt, who has either been a spectator or a subject of its action.
That chloroform is perfectly known less in its action, when not abused by its too excessive administration has been sufficiently proved by experience. Thus it has been ascertainable, from the testimony of those highly respectable Edinburgh Pressers, Duncan and Fleckhart of Edinburgh, that they had, since the time of its introduction, up to January 1849, manufactured, in their establishment, and sold as much chloroform as must have been administered to not less than 2,000 individuals; even admitting a sufficient quantity as wasted, and a very large dose in each person; and yet the recurrence of a fatal accident from the employment of so large a quantity, has not yet been ascertained. It is a singular circumstance in favour of chloroform, that it has never been known to occasion death in Edinburgh, where it is far more extensively employed than elsewhere. Would the results have been the same had any other of our powerful medicines been similarly employed, in pretty large doses, so extensively and in this manner, with out regard being paid to the bodily con...
Virtue of the individuals being considered upon. Amongst whom would have existed a great
proportion of females. But it must be remembered
of that, their extensive use of chloroform, al-
ready mentioned, is a mere fraction of its to-
tal employment by surgeons and the medi-
cine; and it is a remarkable proof of its im-
pressive effects. But nevertheless cases of
death have been attributed, by many, to
its poisonous action on the human body. But
are we to believe that such assertions are
correct? Undoubtedly not until evidence shall be adduced to prove their
feasibility. A few cases of death, indeed, have
occurred, when the individuals, who were
its victims, were in an anaesthetic condition,
from the effects of chloroform. But in the-
most every one of these cases, the occurrence
of death, can with justice be attributed
to the action of something else than the
powers of chloroform. Some of these cases
were mere coincidences, and we have good
ground for supposing that the pathological
condition of the patients was such that they
would have died with or without chloro-
perform. This assertion is in a great measure
are proved by the fact that death does
not occur more frequently in the op-
crating table of the surgeon, when the patient
is anaesthetised, than it did before the
employment of Chloroform came into use.
In the contrary it would appear that it
does not occur so frequently. But it is
further corroborated by the knowledge which
we have from cases of a few cases of death, which
have occurred during surgical operations, when
the patient were not anaesthetised, and Chloro-
form has narrowly escaped from being
judgedly condemned, by those who think
that a case of death never took place under
such circumstances, except as a result of
its fatal agency. It is proper to mention one
of these cases, as being the most interesting
of them, which occurred a day or two before
Chloroform was publicly employed in surgery,
in which, had it been unfortunately admin-
istered, its bright form, have been considered as
very dangerous, by impartial judges, and thus
had its reputation irreparably injured. By Mr. New-
man, as Professor was convinced of the powerful action
Of Chloroform, as an Anaesthetic, together with which attends its use, the
immunity from obtrusion; he communicated his discovery to a colleague, Professor Millan, whose
authority in Defence of Anaesthesia has been pronounced praiseworthy. It was agreed beforehand that
it should be immediately tested in a surgical operation. A patient was seen,
though, chosen, who was about to be operated
off upon for breast, and to whom it was
arranged that Professor Simpson should, him-
self, administer Chloroform. By some lucky
engagement, however, he was deferred from being
present at the operation, and when Professor
Millan commenced to operate, to come as the
first incision was made, the man who was
not anesthetized, suddenly expired. How
fortunate it was for the further advancement
of anaesthesia, as well as for its own reputation,
that Chloroform was not employed in this instance. If it had been gladly used
those who are opposed to it, have, I am told,
of this instance; in order to prove that it
was the cause of the death of the individual in question.
Other cases of death, which have been attributed to chloroform, are to be accounted for by the impurity of the specimen used; the nature of the adulterations being sufficient in themselves to produce not only alarming and anomalous symptoms, but even death itself. It has been already pointed out by Dr. Lethaby, that a great quantity of the chloroform publicly sold in England is very impure, some of the specimens which he examined containing 50 per cent. of muriatic acid, other containing chlorine and other impurities. How should these symptoms of death even result from the inhalation of such impure specimens, surely no one aware of the nature of the adulterations, would attribute the fatal occurrence to the action of the vapours of chloroform. Let any one mix chloroform with a large proportion of muriatic acid, and then breathe the vapours of such a mixture; what would be the result? Professor Christian states that if the adulterations of chloroform were truthful, they would probably explain the occasional anomalous
1. See Medical Gazette in June 1843.
have

symptoms, which occasionally been found
to accompany its employment. Case then,
in the part of the Practitioner ought to be taken
to ascertain the quantity of the Specimen used.

It is admitted by the best Authorities
that Chloroform, when inhaled in an excessive
amount, will produce fatal effects. This ef-
fet has been proved by experiment on the lower
animals. In them however it appears to act more
powerfully than on Man. Of many deaths, which
have occurred during the administration of
Chloroform, can, with justice, be attributed
to its action; these must have been produ-
ced by continuing to exhibit it for too long
a period. But the frequency of fatal cases
caused in this way must be very small indeed.

for the quantity of Chloroform required to
exhale life, is not likely to be Adminis-
tered, by any professional person, at once,
without intermission. Instances have occurred
where patients have been kept in a state
of complete anaesthesia for several hours
together, during which time, so much as


ty of Chloroform have been used, giving a

case being taken care to produce a state of anaes-

thetic for a portion of it from time to time, I used with

writing.
out their experiencing any disagreeable effects subsequently. But if death has occurred from its abusive employment in too large a dose; this is no reason why it is not to be used judiciously, and in proper quantity, when its action is required. For surely no Practitioner would deem from using, Opium, Chloroform, Creton Oil, and other powerful, and highly important Medicines, because they are powerfully poison-ous when given in large doses; and because they are frequently the cause of death from being carelessly and thoughtlessly administered. As almost all our important Remedies are poison-ous in large doses, and we as far as we can from the pharmacopoeia all those that are so; they might as well be thrown away, and the power of the Artist restored to the practitioner. Chloroform, when exhibited for inhalation, is generally poured upon a piece of handkerchief; and as little as these is held over the mouth and nostrils; caution ought to be used in using it; for if the vapours of handkerchief be applied to closel-
in opposition to the free, as to obstruct the
entrance of air into the lungs; then
would death be asphyxiated inevitably.
This fact ought to be attended to by
those who administer Chloroform for
inducing sleep; for this mode of mis-
management, we can, undoubtedly, ex-
plain some of the cases, recently published
in our periodicals, under the title of Deaths
from the inhalation of Chloroform.

The production of an asphyxia, during
a state of anaesthe sia, where Chloroform
was blamed as the fatal agent, has in one
case in particular, been proved by Professor
Symphon to have been occasioned by liquids,
such as brandy, having been, unfortunately,
poured down the throat, in order to assure
the patient from insensibility; when a
portion of the fluid entered the lungs,
(sorry to the epiglottis not closing its
orifice by a voluntary effort, the will
being suspended) and thus shocking the
patient. This case, however, had the good
effect of teaching to the profession, the
most important of the many fine con-
Nations which contrariwise indicate the employment of an anaesthetic, namely: Surgical operations where much blood is likely to enter the throat.

Without entering further into an explanation of the real causes of the deaths for which Chloroform was blamed, I will proceed to prove that it fulfills the fifth indication already mentioned.

Chloroform by its anaesthetic action would save the patient from the shock which the nervous system sustains during severe surgical operations, and which is often the cause of the death of the patient both at the time and subsequently; was from the very first supposed by Professor Simpson; and to corroborate the accuracy of this opinion, we have the testimony of one of the most celebrated surgeons of Europe, at the present day, namely, that of Professor Syrme, whose unbiased opinion is the more valuable, since he, when Chloroform was first introduced, was opposed to its employment. I will quote his own evidence, as expressed by himself at a recent Meeting of the Medicco-Chirurghi.
cal Society.” Professor Syne states his opinion as follows: “After Chloroform was pros-
fected by Dr. Simpson, I used it in the first opera-
tion I had to perform in the Hospital, and
ever since then I have continued the practice.
Further, I desire at this time to state to the
Assembly that I believe Anaesthesia not only
relieves patients operated on from pain, but also from
the shock, and all its effects. When Dr. Simpson
first stated this as his opinion, I thoroughly con-
formed it; but now I am convinced that Dr. Simp-
on was right in his opinion. Some recent cases—
especially one in which I last amputated at
the Hip joint, struck very strongly to impress
this upon me. In this case I did not believe
the man would have survived had the opera-
tion been performed without Chloroform.
As it was he was cheerful and comfortable
a few minutes after the operation, and
never had the slightest bad symptom to
interrupt his recovery.”

This evidence of Professor Syne
must be rather a shuddering shock to the
memories of Chloroform. For it appears diffi-
cult to explain how, if attended with such
though in its administration, it would, according to his statements, have raised the life of individuals whose constitution had already nearly exterminated their existence; or how, in opposition to what seems would lead us to suppose, it should not more readily in lifting within the life of those vigorous in the possession of health, than that of those who are debilitated with disease. Yet were we to admit that it is the agent in causing death in those false cases for which it has been blamed; then would we have also to allow that it produces death more readily on the strong than on the weak. For almost every case on record in our journals, where death has been attributed to Chloroform, the individuals that personed are reported as having been strong and healthy.

That Chloroform, as before stated, does not interfere with the action of the uterus, when the anaesthetica, which it is in excess is not too deep; is proved by the fact that it does not impede the progress of labour, but, on the other hand, facilitates
it by delaying other parts. That it is as safe to the child, as it is to the mother, is proved by extensive experience.

Notwithstanding all these benefits which result from the employment of chloroform as an anaesthetic, yet numerous objections have been advanced against its administration. But from our previous knowledge of the progress of science we are not to be surprised that these really should be. Indeed were the employment of chloroform, as an anaesthetic, and as an improved discovery in medicine, to escape criticism and objection; then only it be an exception to the rule that every revolutionary, or revolutionary, of any importance, made in any department of human knowledge has been opposed in the same way. But let us briefly advert only to some of the most brilliant discoveries that have occurred in medicine, and see how far the above rule is applicable to them. For instance, when Harvey discovered the nature of the circulation of the blood; his opinions and the facts which he brought to light
1. Some of the following remarks are applicable to both also.
were positively amazed by being reminded of
the profession these living who chanced to
be advanced beyond the age of 70.

Again when Jenner made known his
views on vaccination and introduced them
into practice, the result of which introduc-
tion, has been the saving of many thousand
lives, annually in Great Britain and Ireland.

besides presenting the permanent. This figuration
of many others from Smallpox) he was stren-
uously opposed, by almost all the celebrated
physicians of the day, and also, by many of
the clergy and others, upon supposed religious grounds.

True some went so far as to state that those
who vaccinated lived with reverence to Heaven
itself, and also, to the will of God. These and
the little absurdities have but little effect
upon our practices, at the present time; in
the contrary, we catch to the Atheist and Darwini.

When Læmocrose Pate introduced
the ligature to arrest haemorrhage from
amputations &c. instead ofetering the sur-
face of the amputated part by means of a red-
hot charring; his practice being an in-
novation was denounced by the Faculty.
1. Those who wish to be acquainted with the arguments against vaccination may consult: Blaiss Vaccine Contest; Rowley on Cowpox Vaccination; Dr. Squirrell's Observations on Cow-pox.
in Paris as being at variance with all the laws laid down to us by the ancients. The
New College of Physicians in the same city endeavored by the authority of the French
Parliament to prevent the publication
of rival observations, and thus suppress their
diffusion. It is not more incredible than
true, that, even a century after the revival
of the ligature, some surgeons, with blind ob-
stinacy, still adhered to the cautery. Nor with-
standing this let any one dare, now
always, to prefer the cautery to the lig-
aature; and he would soon find from his prac-
tices would be blame.

Being aware then of the above facts
which remain as a disgrace upon the
times at which they occurred. Should
we be astonished to find arguments, not
more philosophic or charitable, ad-
heated against the employment of chloroform?
Most decidedly not; we ought rather
to hail them as a favorable symptom,
indicating that it will continue to be
used (until some better anaesthetic is
discovered, if that were possible) in every
surgical theatre in the civilized world, when a knowledge of its efficacy has become more diffused, and by the rising members of our profession, all of whom will be sufficiently enlightened to appreciate the benefits which its application is able to afford them in the performance of the practical duties of their profession. May the time will undoubtedly arrive, when every professional man will treat, with ridicule, those objections which have been advanced in order to put down the administration of chloroform in surgery and midwifery, with the same feeling as we nowadays laugh and wonder at those objections which were at first used to retard the progress of vaccination, the lightness, &c. And as a result of the improved future condition of our professional knowledge, our surgeons will be permitted to operate, without exhibiting any anæsthetic, when that can be procured. Indeed when the people at large gain more confidence, as to the safety attending the use of chloroform &c. they will demand its administration, instead
As now always, being persuaded to induce it in that view our practitioners will be tolerated, who may be hostile to its employment. They will in fact demand the use of an anaesthetic, when about to undergo surgical operations, even as they at present demand the aid of medicine when afflicted with disease.

The objections or arguments which have been advanced against the use of chloroform are of a religious, moral and medical nature. As to the two former kinds I will say nothing; to contend with them would be to combat with a phantasma; but I will confute them with all their absurdities and imperfections to be doomed to sit in the tomb of theæsoplets, for they have been completely and ably refuted by Professors Simpson and others. Indeed their authors will never gain much applause from the world for the charity they have shown. If they object so much to the introduction of improvements, which add so greatly to the comforts and welfare of man and
Then taught they to add to practically to the Chapmen which they wished to 
indenture, and that they may legitimate by public men, according to their creed; 
They sought first to add the who.
then taught they to abjure practically to the dogma which they were to inculcate; and that they might legislate merely upon their own consciences. Then they sought first to all the wholesome example, and at once return to a state of nature, by ceasing from this moment for ever to enjoy the fruits of past improvements, which they have from their stable and unceasing improvement.

The medical objections have passed.

The same fate, so that I will not address to them here, but will merely state the object which their auditors had in view in advancing them, namely: A desire to prove that the inhalation of chloroform is attended and followed with deleterious and dangerous effects, and that it is apt to cause death. The evidence which I have been brought forward in a former part of this treatise as to the equitable and safe application of chloroform is sufficient to convince any impartial mind, to the contrary.
It was legitimate and natural enough, that medical objections should have been advanced against Chloroform at its first introduction; and before its safety and important utility were well ascertained; but when it has been found to be less open to objection and criticism than any other remedy we possess, and conseqently the objections, opposed to its employment, to be not less fallacious. How are we to account for the fact that many of the authors who advanced will adhere them, namely, in opposition to the test of experience, to defend their erroneous arguments? Only, we can suppose, by a consideration of the causes which prompt them to do so.

In the first place there are many who argue against Chloroform; that no no in defence of preconceived erroneous opinions, and are led so far in their zeal to victory, as to disregard the love of truth; and from this indulgence to other indulgence. From enjoying the greatest boon that science has ever bestowed on
mitigate the sufferings that flesh is
too. Those individuals are men, who,
in consequence of never changing their
opinions, never correct the error into which
they have fallen, but allow them to
occupy a prominent position in
their minds, that, with a determination
of never yielding to convictions, they per-
dure, by the aid of these, in endeavouring
to refute the truth itself, as revealed
by facts, the offspring of experience.

For every argument, however ingenious,
introduced by the utilizers of ether
from anaesthesia, to prove that chloro-
form causes, inhaled or not breathed injurious-
ly; cannot but be refuted by a knowledge
of facts, which, simply sufficient, is prove-
in the contrary.

In the second place there are many
who argue against the propriety of using
chloroform, through their ignorance of
its effects. These opponents, however, constitute
a new and large body of the profession.

lying in many subjects,
who, with thought of profit to obtain
for themselves, in order to ascertain the
truth by which alone it is possible that they may be convinced. But by them it must be borne in mind that in arguing against anaesthesia they are doing so, on unequal
ground, against many of the most celebrated professors, whose praiseworthy zeal is never
prevented in promoting the interests of mankind; and in thus, bringing it nearer to a
standard of perfection. I would advise those who never saw chloroform used, and
are hostile to its employment, to visit
the operating theatre of the Edinburgh Hospital;
or elsewhere, where the employment of chloro-
form is universal. They will then need the aid
of nothing setting more than their own ob-
tion to convince themselves of its beneficentral effects.
I would here leave them to their own
emotions, as rational beings, to form
the contrast which the prevalent belief
of bloodshed presents, (for times one of
suffering) with that of former days, to
which they may have been addicted
at some previous period of their lives.
And if they are men who profess but
A simple feeling of charity for the sufferings of humanity they will no longer condone. Sensibly content, in opposition to all the evidence, they resolved to treat by these means, that the discovery of the anesthetic action of chloroform is the happiest that ever yet graced the annals of medicine; for which not only every Member of the Medical profession, but also the public ought to thank, Professor Simpson.