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SMITH

AN INAUGURAL DISSERTATION
ON OPIUM

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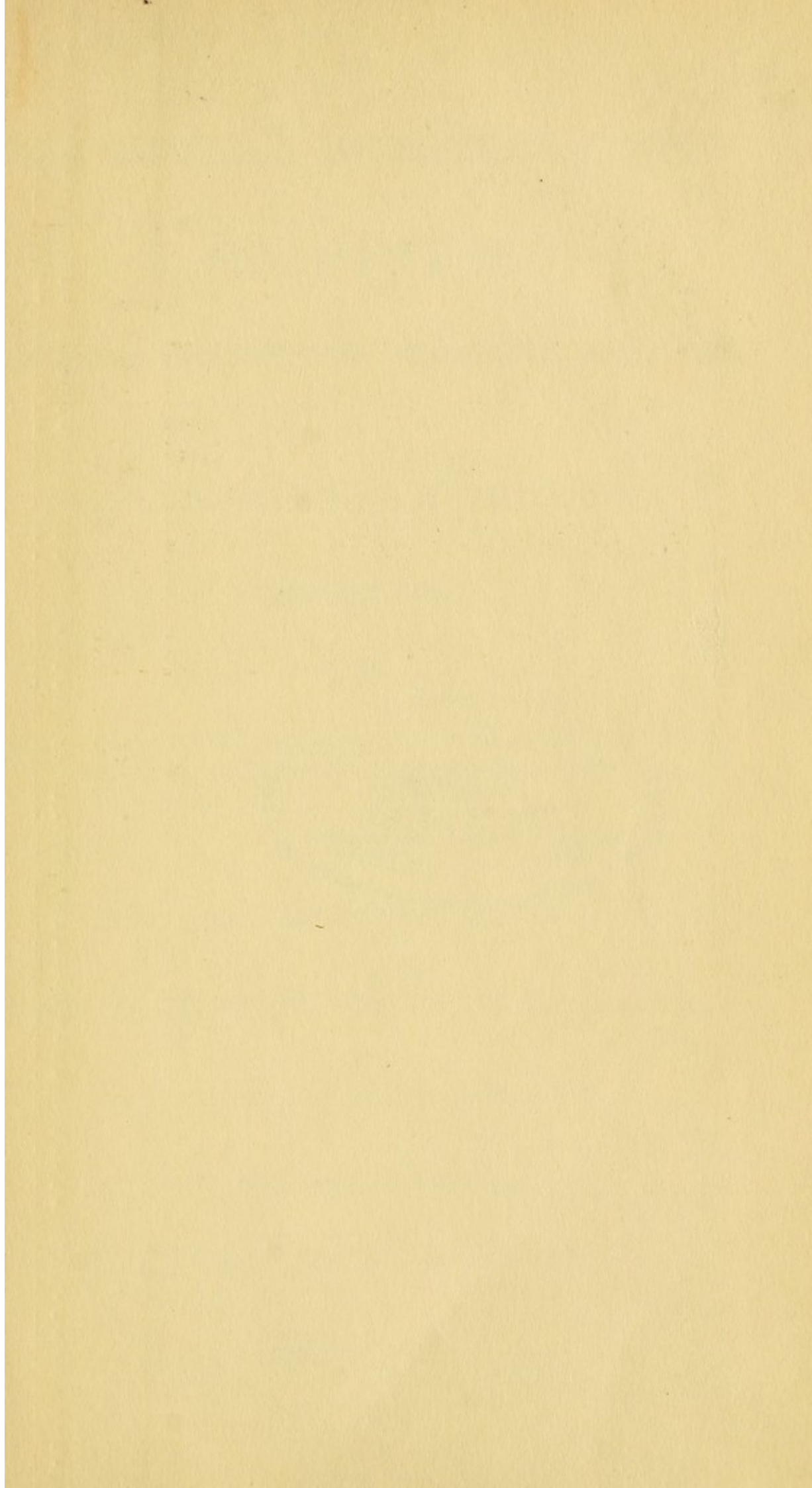
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Smith, William G. AN

INAUGURAL DISSERTATION

ON OPIUM,

EMBRACING ITS HISTORY, CHEMICAL ANALYSIS,

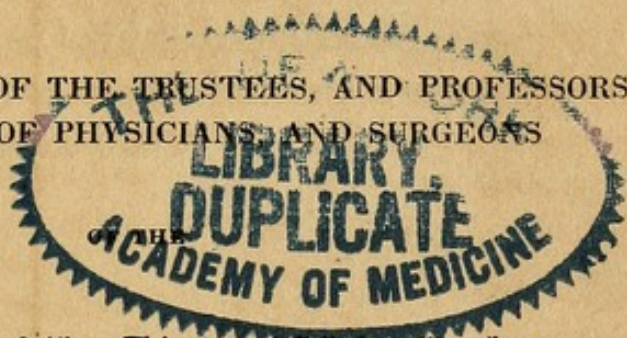
AND

USE AND ABUSE AS A MEDICINE,

SUBMITTED

TO THE

PUBLIC EXAMINATION OF THE TRUSTEES, AND PROFESSORS OF
THE COLLEGE OF PHYSICIANS AND SURGEONS



University of the State of New-York,

JOHN AUGUSTINE SMITH, M. D. *President,*

FOR THE DEGREE OF DOCTOR OF MEDICINE,

BY WILLIAM G. SMITH.

"NIHIL DICTUM QUOD NON DICTUM PRIUS."

APRIL 2d, 1832.

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1832

“ Not a tree,
“ A plant, a leaf, a blossom, but contains
“ A folio volume.—We may read, and read,
“ And read again, and still find something new,
“ Something to please, and something to instruct,
“ E'en in the humble weed.”

JOHN H. BROWN, M.D., &c.

PROFESSOR OF MATERIA MEDICA IN THE UNIVERSITY OF ALABAMA

MARSHALL UNIVERSITY, W. VA.

"I thank you for a book of pleasure and interest. I hope you will find it useful and that it will find a ready sale."

ANSELMO W. TAYLOR, M.D., &c.

THROUGH YOUR KINDNESS AND RESTRICTIONS, I AM COMPELLED TO THIS CRISIS OF MY PROFESSIONAL STUDIES

THEY ARE ALL THE MORE

TRIBUTE OF GRATITUDE IS PRESENTED

THE UNIVERSITY OF ALABAMA

To

JOHN B. BECK, M. D. &c. &c.

PROFESSOR OF MATERIA MEDICA IN THE UNIVERSITY, &c. &c.

TO

SAMUEL EMLIN, Esq.

MY BEST FRIEND, AND BENEFACTOR,

AND TO

ANSEL W. IVES, M. D. &c. &c.

THROUGH WHOSE KINDNESS AND INSTRUCTIONS, I AM CONDUCTED
TO THIS CRISIS OF MY PROFESSIONAL STUDIES,

THIS VERY SMALL AND IMPERFECT

TRIBUTE OF GRATITUDE IS PRESENTED.

New-York, April 25th, 1832.

AN ANATOMICAL DISSERTATION

ON OPIMUM.

By

JOHN HENRY CLARKE, M.D.

NATURAL HISTORY.

In tracing the origin of the term Opium, it is disco-
vered that it emanated from the Persian inhabitants of
India, Egypt, and Arabia. They called the impure
juice of the poppy *Opion*. The Persians, however,
by the modern form, it is termed *Opium*. After the ar-
rival became known to the Greeks, they called it *Opion*,
from *opos*, a word derived from the same language, signifying
juice, and *ion*, a substance. The juice of the poppy,
or *opos* *ion*, is the juice of the capsule, &c. &c. &c.
Indubitably assigned to the juice of any plant, it has the
great and almost universal use of opium in medicine, whi-
ch has been applied to it the epithet *Opium*, *Opium*, and *Opium*.

The opium of the Pharmacopoeia is the juice of the Pa-
paver, or white poppy, with which the seeds of *Papaver* are
in many places, even, as those of Europe and America are
with some. In the Linnæan system, the genus *Papaver* is
arranged in the class *Polyandria*, and order *Monogamia*.
To this genus nine species belong, but that from which the
Official Opium is generally obtained is the seventh, or
Papaver Somniferum.
It is an annual plant. In Europe it flowers in June and
July, and in India and Persia, in the month of February.
The stem is gray, or sky-colored, smooth, erect, and
round; it rises to the height of from five to six feet in the
various situations.
The leaves are large, simple, and entire, they are

AN INAUGURAL DISSERTATION

ON OPIUM,

&c. &c.

“NIHIL DICTUM QUOD NON DICTUM PRIUS.”

NATURAL HISTORY.

IN tracing the origin of the term Opium, it is discovered that it emanated from the ancient inhabitants of India, Egypt, and Arabia. They called the inspissated juice of the poppy capsule, *Affion*. The Persians *Affium*. By the modern Turk, it is termed *Affioni*. After the article became known to the Greeks, they called it *Opion*, from *οπος*, a word derived from their language, signifying juice, adding sometimes *μεκωνος*, the juice of the poppy, or *οπος των κωλειων*, the juice of the capsule: for *οπος* was indefinitely applied to the juice of any plant. From the great and almost universal use of opium in medicine, writers have applied to it the epithets *Manus Dei*, and *Donum Dei*.

The opium of the Pharmacopæias is the juice of the Papaver, or white poppy, with which the fields of Asia are, in many places, sown, as those of Europe and America are with corn. In the Linnean system, the genus Papaver is arranged in the class Polyandria, and order Monogynia. To this genus nine species belong, but that from which the Official Opium is generally obtained is the seventh, or Papaver Somniferum.

It is an annual plant. In Europe it flowers in June and July: and in India and Persia, in the month of February. The stem is gray, or sky-coloured, smooth, erect, and round; it rises to the height of from five, to six feet in favourable situations.

The leaves are large, simple, and obtuse, they are lobed

and cranated, embracing the stem on which they are placed in alternate succession; the flowers are large and terminal; the calyx is formed of two concave leaves, which are smooth, ovate, and cleft. These drop on the expanding of the petals, which are four in number.

The petals are large, somewhat round, entire, a little undulated and white; occasionally of a silver gray colour, and tinged with violet at the base.

The filaments are numerous and slender; shorter than the corolla; they support erect compressed anthers, and the germen which is globular and smooth, is crowned with a many-rayed stigma.

The capsule stands on a short pedicle; is globular when full-grown, smooth and gray, or sky-coloured, like the stem. It is from two to four inches in diameter, a little flattened at the top and bottom, and is crowned with the persistent stigma, the segments of which stand erect, and present an elegant appearance.

The seeds of the poppy are small, white, or gray, reniform and numerous. When ripe, they escape through small openings situated under the points of the stigma.

All the parts of the poppy contain a white, narcotic, milky juice, which abounds in the capsules, hence these are the only officinal parts of the poppy. The seeds are not narcotic, and have little medicinal quality, except that of demulcent. In some parts of India they are used as an article of food. Though the *Papaver* is indigenous to Persia, Arabia, and Egypt, it is found growing wild in many of the countries in the southern parts of Europe. Of late it has been extensively and successfully cultivated in Great Britain for the purpose of obtaining Opium.

In the year 1796, a Mr. Ball received a premium from the "Society for the Encouragement of Arts," for a specimen of British Opium, little inferior to the Oriental.* And lately a Mr. Young has cultivated it with more success than any other person who has attempted its culture in Great Britain.

This gentleman supposed that by sowing the poppies between early potatoes, the following would be the probable return; and such was, indeed, the result of his experiments for one acre.

* Transactions of the Society of Arts, vol. xiv. pp. 260 to 270.

*56 lbs. of opium at 36s. per lb.....	£100	16	0
36 boles of early potatoes at 24s.....	43	4	0
250 lbs. of oil, cold drawn, at 1s. 6d.....	18	15	0
125 lbs. of oil, warm drawn, at 6d.....	3	2	6
500 oil cakes, at 18s. per 100.....	4	10	0
		<hr/>	
	£170	7	6
Expenses	60	0	0
		<hr/>	
Profit	£110	7	6
		<hr/> <hr/>	

The statement of this experiment is, in my humble opinion, worthy of note, inasmuch as it may serve as an inducement to the enterprising American farmer, to undertake, at some future time, the cultivation of so valuable a plant.

It would appear that although this species is to be preferred, as affording Opium in greater quantity than any of the rest, yet the other species seem also to afford a medicine similar to that obtained from the *Papaver Somniferum*. Opium is prepared in several countries, and consumed in large quantities over all the warmer regions of Asia, Egypt, Persia, and Turkey; and in all those countries where the religion of Mahomet prevails.

Egypt, and particularly the country bordering Thebes, has been long famous for the quantity and excellence of its Opium, and hence the epithet *Thebaic* is still retained to some of its preparations.

The seeds of the poppy were the parts first used, and were, with the poppy itself, consecrated to the goddess Ceres. The Persians used the expressed oil, and Homer speaks of it under the name of *μexων*. Helen, it is also said, gave it to the guests of Menelaus, under the expressive name of *Nepenthe*; to drive away their cares, and increase their hilarity.

MANNER OF CULTIVATING THE POPPY.

The seeds of the poppy, according to the best accounts, are sown in October or November, in quadrangular areas.

* Edinburgh Philosophical Journal, vol. i. pp. 258, 270.—Quarterly Journal of Science, vol. iv. p. 69.

The intervals of which are formed into aqueducts, for conveying water to each area. The plants are allowed to grow from six to eight inches apart. They are plentifully supplied with water, until they are six or eight inches high, when a nutrient mixture of dung ashes and nitrous earth is laid over the areas. A little before the flowers appear, they are again well watered, until the capsules are half grown, when the watering is discontinued, and the Opium begins to be collected.

This is effected in a very simple manner. When the heads are ripening, the cultivator goes to the field, armed with an instrument which has five edges as sharp as lancets,* which on being struck into the head, makes at once five longitudinal incisions, and from these wounds the Opium flows.

This is usually done at sunset, or in the cool of the evening, and the milky juice which exudes is collected in the morning, by a person who goes round the field with a vessel attached to his girdle for the purpose.

At the same time that this Opium is collected, the opposite side of the poppy head is wounded in the same manner, and the Opium collected as before. They distinguish, however, the produce of the first wounds from that of the succeeding ones. For in the East, the juice first yielded by the plant is deemed greatly superior to what is afterwards obtained.

After the Opium is collected, it is moistened with a small quantity of water, or honey. It is then worked a long time upon a flat, hard, smooth board, with a thick spatula made of the same wood, till it becomes of the consistence of pitch.† It is then worked up with the hands into moulds, or cakes; covered over with poppy, or tobacco leaves, and is prepared for commerce.

Two kinds of opium are found in commerce, distinguished by the name of Turkey and East Indian.

TURKEY OPIUM.

QUALITIES.—Turkey Opium comes in flat pieces, or cakes; covered with leaves, among which are frequently small capsules of a species of rumex. It has a peculiar,

* Mr. Kerr on the cultivation of the Poppy in India.

† Kœmpfer.

heavy, strong odour, and a bitter, nauseous taste, attended with some acrimony when long chewed. Its colour when good is a reddish brown, or fawn-like. Its texture is compact and uniform; specific gravity 1.336. When moderately warm, Opium is soft and compressible, but by age, and exposure to the air, it becomes brittle, and capable of being reduced to a yellowish-brown powder, which is again aggregated by a heat as low as that of the hand.

Opium is inflammable, takes fire easily, and burns with a bright flame. It is partially soluble in water, alcohol, ether, and the acids. By long boiling in water under exposure to the air, its narcotic qualities are impaired; yet distillation does not separate its active ingredients. * Spirit rather below proof, is its best menstruum. The watery solution when filtered is transparent, and reddens the colour of Litmus; it undergoes no change on the addition of alcohol. "When Opium is triturated with hot water, five parts in twelve are dissolved, six suspended, and one part remains perfectly insoluble, and resembles gluten."

Opium is precipitated from its solutions by the following articles, viz:—

Ammonia, pure.
Carbonates of the fixed Alkalies,
Sol. of Muriate, and Nitrate of Mercury,
Nitrate of Silver,
Sub. Acetate, and Acetate of Lead,
The Sulphates of Copper, Zinc, and Iron,
And an Infusion of Galls.

EAST INDIAN OPIUM.

QUALITIES.—This species in its medicinal effects, is weaker than that of the Turkey Opium. It comes from India, in round masses, covered with the petals of the poppy in successive layers to the thickness, often, nearly of one fourth of an inch. It has a strong empyreumatic smell, but not much of the peculiar, narcotic, heavy odour of the Turkey opium. Its taste is more bitter and nauseous, but it has less acrimony. Its sensible qualities resemble those

* Beaumé, however, asserts that the odorous part of the Opium is an oil.

of Turkey Opium, except that its colour is blacker; its texture less plastic.

It is more friable than that of Turkey, and when triturated with water, no insoluble plastic residuum is left, but it is altogether taken up. Eight parts in twelve being dissolved, and the remainder, suspended in the fluid. An aqueous solution of this species, gives a deeper brown colour than the Turkey. Like Turkey Opium, it is alike precipitated from its solutions by the agents mentioned under that head.

EXCEPTIONS.—A solution of the Acetate of Barytes does not alter the solutions of Turkey opium, but produces a copious precipitate with those of the East India. Oxalic acid also precipitates both, but the latter more copiously.

IMPURITIES.—The purest opium is that which the Asiatics call Opium in Tears; and which is the pure concrete juice of the poppy. But much of the opium of commerce is said to be increased in bulk, by the addition of an aqueous extract of the plant, procured by evaporating a decoction. The fibrous impurities usually found in opium, probably result from a slovenly manner of its preparation; though often, from a fraudulent and intentional adulteration, various inert substances being mixed with it for the purpose of increasing its amount.

SIGNS OF IMPURITY.—Opium is to be regarded as spurious when it is either very soft, greasy, light, or very friable; or is of an intensely black colour. If it has a weak, or empyreumatic odour; a slightly bitter, or acrid, or a sweetish taste, or the quality of marking a brown, or black continuous streak, when drawn across paper, it is to be suspected as not genuine.

CHEMICAL ANALYSIS.

Many chemical analyses of opium have been made by different experimenters. Among the latest and most splendid are those of Derosne, Sertuerner, and Robiquet. From the experiments of these Chemists, we find the component parts of opium to be

Extractive Matter, Mucilage,
Fœcula, Resin, Fixed Oil,

Coautchouc, a Vegeto-Animal Substance, And Gluten, &c.

Besides these, it is found to contain two proximate principles, on which its medicinal properties chiefly depend. The one of these is an alkaline body, termed Morphia; the other, a substance which does not appear to possess the characters of an alkali, and has received the name of Narcotin. Morphia exists in a state of union with a peculiar acid, which has been called the Meconic acid. This acid appears to exist in such a proportion as to form a Super-Salt, or a Super-Meconate of Morphia.*

Derosne was the first Chemist who obtained a crystalline substance from opium, which he announced* in 1803, but did not describe its nature or properties. In the following year, Seguin, discovered another crystalline body in opium; he announced it, but never hinted at its alkaline nature. About the same time, that Derosne and Seguin were engaged in these researches, Sertuerner, at Eimbeck in Hanover, had also obtained these crystalline bodies; but it was not until the year 1817, that even he first, unequivocally proclaimed the existence of the new vegetable alkali, and assigned to it the narcotic powers, peculiar to the operation of opium. He thus named it Morphia, and it appears to be the same as the salt of Seguin.

The salt of Derosne now denominated Narcotine, is quite a different principle, although it was constantly mistaken for one of the Salts of Morphia; until M. Robiquet pointed out its distinctive characters.

MORPHIA, OR MORPHINE.

Various processes have been recommended for obtaining Morphia, by Sertuerner, Robiquet, Choulant, and Thompson; but one of the simplest is that recommended by Mr. Brand, as follows:—

“Powdered opium triturated into a paste with dilute acetic acid; pour caustic ammonia into the filtered solution, and evaporate.” During the evaporation, a brownish substance separates, which by digestion in cold alcohol, becomes nearly colourless, and is impure Morphia.

* “Dr. Paris thinks that the state of combination in which they exist, modifies the action of Opium.”—*Pharma.*

† *Annales de Chimie.* T. xiv.

QUALITIES.—Pure Morphia is a crystalline, transparent substance; insoluble in cold, and only sparingly soluble in boiling water. It is soluble in from 40 to 45 parts of cold, but to a greater extent in hot alcohol, and in eight parts of ether, and in the oils.* These solutions are intensely bitter, and turn the syrup of violets green. It has all the characters of an alkali, in combining with acids to form salts; it decomposes the solutions of metallic salts, precipitating their oxides, owing to its greater affinity for the acids with which they are combined. It fuses at a moderate heat, and acquires the aspect of melted sulphur. Morphia does not form soap with an oxidized oil. A strong heat decomposes it, and carbonate of ammonia, oil, and charcoal result. Morphia burns readily in atmospheric air. By nitric acid it is turned red, which therefore affords a test of its presence.

MECONIC ACID.

This acid, in its native state, is in combination with Morphia. It may be obtained from opium by the action of weak sulphuric acid on the magnesian residuum left after the action of the hot alcohol, in the process above described for extracting Morphia.

To this solution, if we now add muriate of baryta, a precipitate, consisting of the sulphate and meconate of baryta, will be formed. Digest this with hot, and very weak sulphuric acid, then filter the liquor, and by reducing sufficiently the quantity by evaporation, the meconic acid will shoot, even before cooling, into coloured crystals. "These are to be washed with a little water, dried, and sublimed in a flask."

QUALITIES.—This acid is very soluble, both in alcohol and in water. The solutions are sour to the taste, and convert vegetable blues to a red colour. It combines with alkalies and forms Meconates, several of which crystallize. "Its distinguishing character is, that it produces an intensely red colour in solutions of iron oxidized *ad maximum*." Neither this acid, nor the salts which it forms with potassa, sodæ, or lime, have much medicinal action in the human system.

* Paris's Chemistry, p. 425.

NARCOTIN, OR DEROSNÉ'S SALT.

QUALITIES.—This also is a proximate principle of opium; usually obtained in white, silky needles, insipid, and inodorous. It is neither acid, nor alkaline; it does not form salts with acids, which dissolve it simply. It is also dissolved by the oils, and ethers; in water, on the contrary, it is almost insoluble, requiring 100 parts of cold alcohol, and 24 of this menstruum when boiling, to dissolve it. According to Dr. Bally's experiments, this substance has little action on the animal economy. Orfila, on the contrary, believes that it exercises a stupifying and deleterious influence, when taken into the system; while Dr. Magendie thinks it acts as a powerful excitant.

Narcotine, the subject of such various and contradictory opinions, is not used as a remedy; it is obtained by digesting opium in ether.

Besides the Meconic, opium would appear, also, to contain another acid, which is not volatile, and which has no peculiar effects upon the salts of iron;—designated by Robinet, Codeic Acid.

FORMS OF EXHIBITION.—Opium is given in substance, or under the form of tincture. A grain of solid opium is an ordinary dose, to be varied according to circumstances. If opium, in powder, be made into pills with resinous substances, it will be more gradual in its operation. If with mucilage, or syrup, it will be more speedy. When a very prompt effect is desired, laudanum is preferable to undissolved opium. An aqueous infusion, made by infusing powdered opium in boiling water, will often operate, without producing that distressing nausea and headache, which so frequently follow the use of this substance. But there is a difficulty in regulating its strength; hence an objection to the use of opium in this form.

If the stomach readily rejects opium, it may be thrown into the rectum, as an enema. In this case, double the quantity should be employed.

Opiate injections, or suppositories, are also indicated when the rectum, or parts in its vicinity, are the seat of the complaint, as in dysentery and strangury. In the above forms, it also affords relief in spasmodic affections of the

bowels, and in painful diseases of the prostate gland, or bladder.

In combination, the medical powers of opium are greatly multiplied, so that there is scarcely a disease, in which it may not, during some of its stages, be rendered useful.

OFFICINAL PREPARATIONS OF OPIUM.

Among the officinal preparations, it may not be improper to mention a few of the leading ones. For it would almost be an endless undertaking to enumerate them all; opium being "the quack's sheet anchor."

Opium purificatum. Pilulæ Opii.

Pilulæ saponis cum Opio.

Pulvis cornu usti cum Opio.

Tinctura Opii. Confectio Opii.

Tinctura Camphoræ Composita.

Pulvis Ipecacuanhæ Compositus.

But of all the preparations of opium, none are more universally or commonly used, than the simple laudanum, the black drop, or acetate of opium; the Dover's Powder, and Paregoric Elixir.

Neither Morphia, nor any of its salts, have yet come into very general use in the practice of physicians, at least, on this side the Atlantic. This may be partly owing to the high price which it continues to command, and partly, to an adherence to the old established maxim, never to abandon an article whose virtues are known, and universally acknowledged, for one not yet proved, and but just introduced.

When Morphia is used, it is in form of the sulphate, citrate, and the acetate, and what is usually called the Anodyne Drops. These may be given either in solution, or in syrup. One of the more common forms is, the solution of the acetate of Morphine. Besides these forms, the acetate and sulphate may be given in form of pills; in electuary; in draughts, or in mixture. The dose being from one fourth of a grain to a grain in twenty-four hours.

INCOMPATIBLES.—Bi-chloride of Mercury, Acetate of Lead, the Alkalies, most of the Metallic Oxides, Infusion of Galls, Nitrate of Silver, and yellow Cinchona.

When our object is to obtain the sedative effect of opium, it should not be combined with stimulants.

ANTIDOTES.—To persons poisoned by a large quantity of opium, a powerful emetic of sulphate of zinc, or the sulphate of copper, should immediately be given, proportioning the amount to the emergency of the case, and repeated at short intervals till vomiting is produced. The vegetable acids, viz. vinegar and lemon juice, should be administered after the stomach had been thoroughly emptied by the ordinary means, otherwise, such a practice would accelerate the solution and activity of the opium. Strong coffee and tea may be freely administered; also, cordial stimulants, which are not of the narcotic kind, as ammonia, musk, and the aromatics. The patient should be kept erect, and moved frequently, and the surface of the body excited by friction, rubefacients, or blisters. If the patient be comatose, venesection is proper.

MEDICINAL EFFECTS.

By whom opium was first introduced, and particularly retained as an article of the materia medica, nothing certain is known; but that it was from the earliest times, valued as a remedial agent of no small power, is allowed by all. As a medicinal agent, it has been traced to the time of Diagoras, who was cotemporary, or nearly so with Hippocrates; but though it was thus early prescribed in the treatment of disease, its medicinal qualities and intrinsic worth, as an article of the materia medica, were imperfectly understood, and destined to be realized, and properly appreciated, only by the physician of modern times.

In works on Pharmacy, opium is ranked under the head of Narcotics, from *ναρξω*, I stupify. It is also called Anodyne, from *α* priv. and *ὀδυνη*, to allay pain. And Sedative, from another word, *ὑπνῶω*, I put to sleep.

This medicine has given rise to much controversy, respecting its *modus operandi*. Dr. Cullen contended that it was always sedative, and that the resistance of the *vis vitæ*, occasioned it to act as a stimulant whenever it did so; while Brown and his followers, supported that its effects on the living system were always that of a sti-

mulant. The fact appears to be, that it acts primarily by stimulating the nervous system, while its secondary effect is a diminution of nervous energy, producing torpor, insensibility and sleep. Administered in a moderate dose to a man in health, it produces within a short time, generally from five to twenty minutes, a marked effect on the brain and nervous system. There is an increase of the animal spirits, or a tranquil confidence and serenity of mind; which is afterwards followed by a tendency to sleep. It diminishes the sensibility of the animal system; and the body becomes less susceptible of annoyance, pain, or disturbance from external causes; in moderate doses, it lessens irritability in the various organs and textures, so that their functions are manifestly retarded.

Primarily it operates as a powerful and very diffusible stimulus; but this primary operation is followed by narcotic and sedative effects, in a degree much greater than could be expected from the previous excitement it induces. It is not known to produce any change in the composition of the blood, but increases the aqueous exhalations from the lungs.* In moderate doses, it increases the fulness, the force, and the frequency of the pulse; augments the heat of the body; quickens respiration, and invigorates both the corporeal and mental functions. But, by degrees, these effects are succeeded by languor, lassitude, and sleep; and, in many instances, headache, sickness, thirst, tremors, and other symptoms of debility such as usually follow the excessive use of ardent spirits, supervene. It acts on the different tissues, by lessening their natural secretions and excretions, excepting the secretion from the skin, which it promotes. "Its operation is often attended with an itching, or sense of pricking of the skin, which is sometimes terminated by a species of miliary eruption." All the chylopoetic viscera are rendered slower in the performance of their functions;† the appetite is less keen, and digestion slower; the peristaltic motion is lessened; the urine is diminished; and the mucous of the throat and fauces rendered thick and more sparing. It relaxes muscular action, and in very large doses, the primary excite-

* Burdach. *Arzneymittellehre*, b. iii. s. 491.

† The fœces of persons, says Dr. Paris, after the use of opium, is often clay-coloured.

ment is scarcely apparent ; the pulse seems to be at once diminished ; drowsiness and stupor immediately come on ; and are followed by delirium, sighing, deep, and stertorous breathing, cold sweats, convulsions, and death.

When opium is introduced into the cavity of the peritoneum, it speedily produces convulsions and death. According to Orfila, "the effects of opium are, in general, more decided when it is injected in glysters, than when it has been introduced into the stomach." This, Dr. Eberle supposes to be owing to its not having been primarily subjected to the action of the digestive power. It acts, according to Nysten and Orfila, more energetically when injected into the cellular texture of the body.* The same writer states also, that this article does not destroy the contractility of the muscles to which it is applied, and that a heart will continue to contract for a considerable time when plunged into a solution of opium. But Wilson Philip contradicts this, and states that although he found opium, when applied to the external surface of the heart and alimentary canal, to produce no sensible effect on their muscular power ; yet, when brought in contact with their internal surface, it produces "the same effect, as when directly applied to the muscular fibres themselves, immediately, unless the quantity be extremely small, impairing their power, and destroying it instantly, if the quantity be considerable."

Dr. Chapman asserts that "the practice of applying opium as an embrocation is altogether delusive, and deserves no attention." But this opinion appears to be unfounded ; for the same gentleman allows that the use of it as a "local remedy to assuage pain, may be efficacious." Now if he at all allows, that, as a local remedy, it may allay pain, he allows in fact that it does so through the medium of the skin ; and by acceding this point, which he does, in fact, he admits at once, that this remedy so applied, is efficacious by acting on the sentient extremities of the part to which such "local remedy," or "embrocations" are applied. And if it does this on one part, there is no just reason to believe it incapable of doing so when applied to any other part of the surface.

In combination with vegetable acids, the narcotic quali-

* Orfila's System of Toxicology, p. 250.

ties of opium are increased in consequence of the formation of soluble salts.

PRACTICAL REMARKS ON THE USE OF OPIUM.

Opium is employed in the treatment of numerous diseases: but my subject being already too much lengthened, I must defer mentioning many in which it is usually prescribed.

A few remarks on the judicious use of this article in the treatment of diseases generally, may suffice on this head.

There is scarcely a disease in which opium may not, during some of its stages, be brought to bear, by the judicious physician, with advantage: it has been used with the happiest effects in the phlegmasial diseases, after free venesection. By the late Dr. Post, it was a practice; and in such cases, the dose is recommended to be particularly heroic. The experienced Armstrong, and some others, also speak of its use in inflammations.

But as a general rule, inflammations of passages bear opium better than those of circumscribed cavities, and those of mucous membranes better than those of serous, or cellular textures; inflammations of the latter kind become susceptible of benefit from opium, only in their secondary stages, and after depletion has been carried to an extent which renders it no longer admissible.

In the early stages of simple fevers, opium almost always does harm; it can rarely be given with prudence in any case of strong arterial excitement, and its use is equally improper when there exists a determination to the head; yet, after full venesection, there is not the smallest danger in its administration, especially if combined with calomel.*

All persons are not equally susceptible of the influence of opium; nor the same persons in all situations.

The robust bear more than the weak and delicate, and persons long addicted to its use, more than the unaccus-

* Med. Chirurg. vol. iii. p. 223.—Scott on Cystitis.

tomed, and all its effects are modified by the actual condition of the system at the time opium is exhibited.

ABUSE, ETC.

Opium should never be exhibited simply to rouse the spirits, to awaken the fancy, or to give a temporary exertion to brilliant wit, this practice is most deleterious. Neither should it ever be used, except to obviate some symptoms of disease, or for such other purposes as judgment sanctions. Opium should never be used as a substitute for the ordinary stimulus either of wine or spirits: for when it is thus used, it seldom fails to lay the foundation for a long train of morbid symptoms, which, sooner or later, terminate in all the wretchedness, which disease is capable of inflicting; yet this drug is in every day's use, and particularly among the better circles of society, and by the softer sex.

Fearful of names, rather than of consequences, opium is continually resorted to by many of both sexes, but particularly by females, and these of the higher circles, as a substitute for the stimulus ordinarily afforded by gin or brandy. And hence the emaciation, and most of the long train of dyspeptic symptoms, and gastric derangements so commonly met with in persons in this class of society. But there is another class who resort to opium, in some one or other of its forms, either from indolence, or carelessness, or both; I mean mothers, nurses, and those to whom are intrusted the charge of infants. The youthful, inconsiderate mother and the idle nurse, too frequently resort to opium, to hush the infant's cries, which might have been done, by the ordinary and only best means of nursing.

The gay and youthful mother, rather than forego the pleasures of a crowded assembly, or the gaudy charms of a dramatic scene, a single evening, not unfrequently commits the unfortunate infant to its cradle under the influence of opium, in the form, either of Dalby's Carminative, the Paregoric Elixir, or Godfrey's Cordial, and even laudanum itself.

Many instances of this nature could be adduced; one, however, may suffice on this occasion.

CASE.

Eliza, aged one year and ten mouths, born at the full time, of healthful parents, herself healthful, and at birth weighed ten and a half pounds. Mother young and fond of social amusements, with means to obtain them. When about three months old, Eliza became cross, and somewhat troublesome, particularly at night. Paregoric was given in order to induce sleep; continued with increased doses. After some time, this ceased to have its desired effect. Laudanum was now given in place of the Paregoric, commencing at first with gtt. iii. in Annisi. infusion, or tansy—increased gradually to gtt. x. and so on; and now, at the age above stated, from 50 to 60 gtt. have been taken regularly every night for upwards of eleven months.

On February 5th, of the present year, I went with a medical friend, whose advice was required in Eliza's case, she being much afflicted with diarrhæa. Her countenance bore marks of premature age—expression that of a child three or four years old; head disproportionally large; abdomen prominent and tumified; extremities disproportionally small, and like her face, pale. Integuments much wasted, flaccid, soft, or somewhat doughy, resembling in some degree bleached tallow or wax, which had been exposed to the air. She does not walk; general debility; eye sunken, small, heavy, and having but little or no expression—integument of the lids somewhat corrugated, from a loss of support formerly afforded by the balls of the eye, which have receded preternaturally. Appetite variable, and at no time good. Pulse small, soft, and rather slow; seldom sleeps, except under the influence of her usual dose; troubled with periodical diarrhæa, the food always passing away indigested, and in lumps, until the time arrives for the repetition of her usual dose, Eliza remains in a semi-torpid, listless state; peevish, and having a desire more for fluids, than solid food.

Now that this periodical diarrhæa has been induced and kept up by the long and injudicious use of opium, ad-

mits of no doubt. Its long use, and in such quantities, having so far impaired the muscular vigour of the coats of the stomach, and of the alimentary canal, together with the functions of the absorbents, most of the phenomena above described, are to be imputed.

But the injudicious use of opium is not confined alone to mothers and nurses, many practitioners of medicine are also culpable. Like calomel and jalap, which, because it is allowed to be useful in almost all cases, it is often forgotten that there are, nevertheless, many cases in which opium, like that prescription, is not admissible.

In hope, however, that as the science of chemistry advances, it will continue to unfold even more minutely than it has already done, the hidden principle of activity, alike of many other agents of the *Materia Medica*, as of opium, we trust that error, like the dew, will vanish under the shining influence of improvement in the profession.

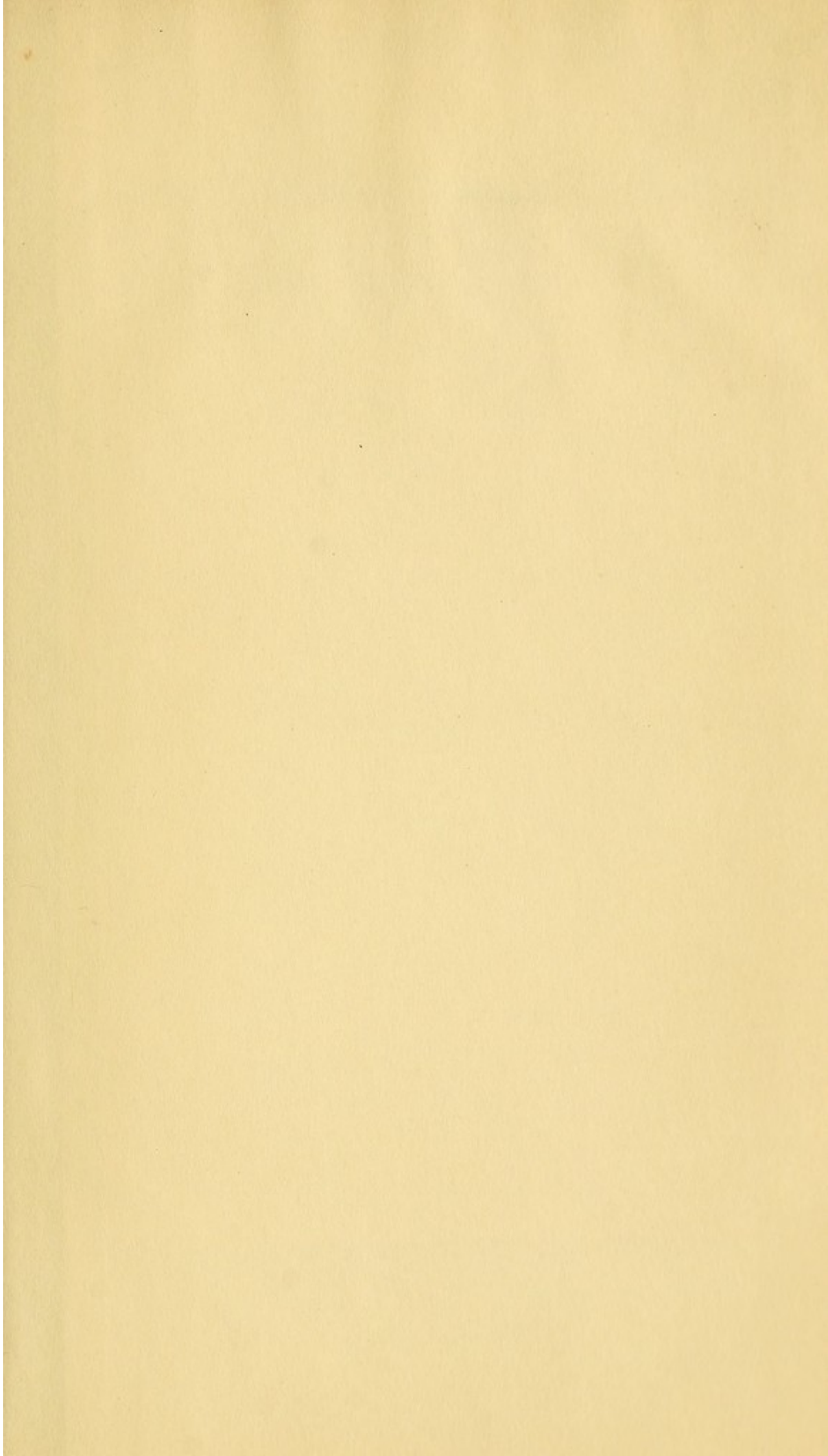
THE END.

The first part of the book is devoted to a general survey of the subject, and to a description of the phenomena observed in the various forms of the disease. The author then proceeds to a detailed account of the pathology of the disease, and to a discussion of the various theories which have been advanced to explain its origin and progress. The book is written in a clear and concise style, and is well illustrated with numerous figures and diagrams. It is a valuable work for all those who are interested in the study of the disease.

INTEGRAL DISSERTATION

PLEURAL FEVER

THE END



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