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On Cannabis Indica.

1858
Cannabis Indica - Its Botanical characters, Physiological actions, and Therapeutic uses.

Faced as man is, in a universe of infinite variety and beauty, where a ceaseless round of striking changes are ever presenting themselves, the outward and material must always form the first subject of investigation. We find accordingly, that the desire to unfold the secrets of nature, and explain the causes of her phenomena, is in the nation as well as in the individual coeval with the dawn of reflective intelligence. When history first shed its light on humanity and shows man struggling upward from the degradation into which he had fallen, Nature being still a total mystery, filling only with wonder and awe, every effect was considered the act of some higher power. So he sought himself up from this...
This self-abasing belief, the Phenomena around him stood forth in their proper position, as facts capable of natural explanation. Now the investigation should be made was now the question. Conversant with the marvellous power of his intellect, and as yet unacquainted with its limits, he sought to make it the sole instrument of discovery. Elaborating sweeping hypotheses as to the nature of things, he transferred them to the material world, and tried to make the Phenomena fit the Precambrian theories he had prepared for them. Thus age after age the greatest intellect tried on and on in the vain attempt to develop by a prior reasoning, the unity and harmony of the universe. It was only after endless failures that Man, baffled and weary, consented to sit humble at Nature's feet, and by slow and patient observation learn her secrets. Then intellect regained even a vider because a former empire; when the became in the language of
of the great founder of experimental science, natural medicine, and interpreters. In no science has the onward progress from superstition, credulity, to profound self-sufficiency, and thence to the humble inquiring spirit of modern scientific research been more apparent than in medicine. In early ages the pains which racked the human frame were supposed to be the direct infliction of some offended deity, the avenging shafts of an irate archer. As a better light dawned, and man began to search after hidden causes, many and varied were the theories propounded as to the origin of diseases. Impelled by the natural craving for unity, and discarding the tedious attainment of it by slow induction, a hasty and incomplete generalization was made, from a few instances, and every effect referred to one or two causes, (with some a third state of the humours, a disarrangement of the corporels, or an unduly proportion of certain elements were considered sufficient to account for every disorder.)
When the necessity of observation and a careful induction from a sufficient number of individual facts became fully recognised as the only possible mode of building up a science, a revolution took place in both the theory and practice of medicine. No longer Empiricism reigned. By and by other sciences, in their onward progress, placed new and powerful means of discovery in the hands of observers. The Microscope, and analytical chemistry in particular, with the advent of the Analytical of the blood and other fluids in diseased states, shed a flood of light on what had been previously dark, by these and other means numerous new remedial agents have been, and are still being discovered. In the introduction of these the principles which regulate the formation of the science must never be lost sight of. Accordingly new theories are continually being propounded and supported sometimes ousting the older notion, but
but more frequently lapsing into oblivion. De a priori reasoning from mere subjective or chemical theories can never establish anything as a remedy. The number of men who can advance new theories and support them by plausible reasoning is very small indeed, when compared with those who are perfectly content to stumble on some plant possessing medical properties, and support their views by adding cases, according to little doubt that anyone who will take the trouble to look into the records of hospitals, the Medical Periodicals, and the Medical Essays of our various societies, and compile a list of all the new remedies which have been brought under the notice of the Profession during the last 20 or 30 years, will find their number amount to scores hundreds, while the list of those admitted into practice are very few indeed; yet all were landed by
by their discoverers. All were stated to have some important therapeutic properties and to be likely to supersede some drug of long-established use. This would prove if indeed it required a proof the danger of trusting to the opinion advanced by the proposer, whose manner proper is extremely likely to lead him astray. Turned into the opposite extreme, and to press untried all remedies newly proposed or discovered would be equally unwarrantable. Experiment, many and varied, and observations carefully made over a wide field can alone fully establish anything to a place in the Pharmacopeia. Among the acknowledged remedies discovered within the last few years stands Cannabis Indica; the importance of which is not yet fully established, and we would not have been less in hearing its announcement that it mere than its fellow candidate was worthy
of our consideration. An investigation must and ought to be made by a multitude of independent observers. It is necessary that the scattered results of their inquiries should occasionally be gathered up and recorded. It is in this way, by the arrangement and comparison of ascertained facts, be prepared in the following theses to proceed.

The word Cannabis has been variously derived. Lindley, on the authority of Bremel, traces its derivation to the Arabic "Kammâb" or "Kamas" (the canape of the middle ages). Dutch words "Kemp" or "Koemp" German "Hainf" whence the English word Hemp. It is stated elsewhere to be derived from the Greek "Karappot" which name it is supposed to have obtained from pressing incessantly round opening hempseed just as a cropper with a very wide spade reaching twice others.
Others derive it from the Latin ', Caninae because its stem is hollowed like which is probably its true derivation arced. Sativa means from a cultivated, its variety being called India from growing in that country.

Cannabis Sativa - the plant at present tenderly in consideration is the common hemp plant of this and other countries. It appears to be a native of Persia, and is certainly found wild in the hills to the north of India, where it is subjected to great cold in winter, and considerable heat in summer. It has also been cultivated from time immemorial in Hindustan almost all parts of Europe, Asia and the north of Africa. Herodotus (B. IV, 79) mentions that the plant grows spontaneously in the Taunie and Caucasian regions, where the Scythians with a view to its being cultivated, it manufactured into clothing. They used also to take some of the seed, creep under a cloth and then throw it on red hot stones which produced
produced such a steam that no Grecian vapour bath could surpass it. The vapour he adds do transport them that they shunt abroad. This may be supposed to refer to the narcotic properties of the Smith, which are still known and indulged in, especially as in another place (181-222) he speaks of them sitting round a fire and inhaling the fumes of a burning plant till reduced to a state of intoxication. Dr. Ryle suggests that the **Vipernes** (asparagus?) of which Homer speaks may have been the hemp plant, but the name **Vipernes** seems to have been applied by the Greeks to a class of remedies rather than to any particular drug. Theoborus Smyrnæus considers it to have been the common tincture of Chym in Lecanum, others apply the name to the Drago Officinalis or common Drake, while in more modern times the appellation has been borne by many narcotic remedies. Some
centuries ago, Cannabis was thought to possess poisonous properties, and there is an old statute of Henry VIII, still in force, by which hemp is forbidden to be soaked in ponds or running waters from which cattle drink. Similar enactments exist or have existed in other countries of Europe, and old writers all speak of it as a violent poison stating that the water in which it has been soaked pursuadeth its effects almost at soon as drunk. A few years ago a farmer in Kintail, Michael Duff, thine had several cattle poisoned from drinking out of a pond of water in which hemp had been soaked. They all seemed lively and active after drinking. Shortly after it seemed to act as a hypnotic, for most of them fell into a sound slumber, which showed that it acts similarly on them as in the human subject. It is worthy of remark that only two of the cattle recovered, and the rest were those in whom the stimulating exhilarating
effects of the hemp were most manifest. James in his New English Dictionary, published in 1747, describes the plant as follows: “Cannabis officinalis, Cannabis Sativa, Park Bough. Indian hemp—the root boiled, and applied by way of Cataplasm, mitigates inflammations, dissipates tumours, and dissolves softaceous tumours of the joints. The seed of the Hemp is the only part of the plant established in Medicine, which, when boiled in oil, till the hulls crack, is esteemed efficacious in old coughs, and as a specific against the jaundice. It has been accused of causing impotency, but how inconsistent this will appear not only from its making hens lay their eggs in greater plenty if moderately pierced but also from the fact that the Samoo Banjo, so much extolled as an aphrodisiac, bolts by the Persians and Indians is a sort of hemp. This passage incline...
to the opinion that the seeds possess the medicinal properties of the plant itself. In a work published at Leyden in 1735 there occurs a very good description of the hemp plant, but inexplicable enough no medicinal properties are ascribed to it. Cullen in his "Materia Medica" mentions the seeds of the Cannabis being used as food and yielding an oil, and as being used externally as an emollient, in a similar manner as Linseed, but he says nothing as to its action. The depressing effects of hemp have been long known in the South of Africa, America, Morocco, Egypt, Arabia, Turkey, Asia Minor, Persia, India and the adjoining territory of the Malayan, Burmese, and Siamese. In all these countries it is either smoked or drunk for the purpose of intoxica[tion and in some of them it is likewise used medicinally.

Ainslie in his "Materia Medica" page 12
to Tobacco and smoked so as to increase its intoxicating power. They are also sometimes given in cases of diarrhoea, and in conjunction with Curare and warm Gymkh. oil are made into an application for painful swellings. Protracted fever, this Electuary (Madjum) is much used by the Mahattas, particularly, the more choleric who take it internally to intoxicate and cause pain, and not infrequently from an overdose of it produce a temporary mental derangement. He does not however recommend its medicinal use or include it in his table of doses. It is chiefly used however, throughout the East in the forms of Tobang or Sidge, a preparation from the leaves which possesses very strong intoxicating properties. Dr O'Flaherty having been commissioned by the Afghan government to investigate
the Materia Medica of that country had his attention particularly directed to the Cinchona or Indian Hemp, and in 1839 and again in 1841 published the result of his enquiries in the Bengal Dispensatory. It was thus brought under the notice of the Medical Profession in this Country who have given different degrees of credit to its virtues, some denying that it has any medical properties at all, others holding it out as a Therapeutic agent of the greatest power. Which of these opinions is most tenable no one attempt to show in the course of the following Thesis.

The Cannabis or Hemp plant receives the following Names in the Countries where it is known:

German, Hanf; Danish, Hemp; French, Chanvre; Malay, Gunjah; Arabic, Khabab or Xinal; it is called by the Turks, Malakh; by the Hottentots, Bacha; and by the Jews, Elbow or Heep. Its various preparations, rubine
have different names which will be mentioned in treating of them separately. The Cannabis Sativa belong to the Linnaean Class Dicoccidea, order Poaceae, in the natural system it belongs to the sub-class of the Monochlamydeae, Eugenae in the natural order Urticaeae, and in the sub-order Cannabinae, which are distinguished from the true Urticaeae by having a watery juice, flower, bracts, filaments straight and anthers erect, during the spreading of the floras. Two sessile filiform stigmas with a pendulous ovule and a spiral epalbuminous ovary. Besides the Cannabis the suborder Cannabinae contains the Herbae Lupulus or common hop, which possesses slightly sedative properties though these have been denied by some. This property is chiefly found in what are termed the Lupulin glands. These have been analyzed by Payson, Cherakin Wellton, and
and have been found to contain besides a bitter principle called Lupulin from 30 to 33 per cent of resinous matter. The active principle of the Cannabis Indica is as will afterwards be shown believed to reside in a resin and perhaps it may not be stretching Analogy too far to suppose this to be the case in the Cannabis alas. It must at least lose some of the properties of the correspondence of properties be generally found to exist in the natural family of plants. The Urtica, Dioda, or common nettle was employed medicinally by the ancients and seems to have had properties similar in some respects to those of Cannabis as appears from the following passages. Paulus Nginuta says: In cases of impotence it may be proper to rub the parts frequently with an ointment containing a small part of the root of the Narcissen or the seed of Thymelica or Bellitory or Sarracen or the seed of the nettle or arrive.
In some parts of China, fibres are procured for manufacturing from the Betania 
Nivea, a plant of this order, which yields the fine Chinese grass which is 
so much used in India for making 
jackets, dresses, and sailcloth, indeed 
two beautiful specimens of cloth made 
from this plant, may be seen in the 
Edinburgh Royal Botanic Museum.

Botanical Characters of the Cannabis 
Sativa. It is an annual plant 
about 3 feet high, covered all over 
with an extremely fine glandular 
pricklecence, scarcely visible to the 
naked eye - stem erect, branched 
with bright green angulose. 

Flowers axillary. In male plants 
the leaves are opposite, sapgreen above, 
Petachis green below - at the upper 
part of the stem the leaves become 
alternate, the segments of the leaves 
feathered, with a prominent 
midrib with two tubulate stipules of 
The flowers racemose, some of them 
abortive,
abortive. Perianth 5-parted consisting of 5 ovate blunt segments, the margins of which are white & the centre pinkish with a green midrib covered all over with a glandular pubescence. Stamens 5, downy opposite the segments of the perianth. Anthers large, pendulous, bilocular, erect and dehiscing longitudinally. Pollen spherical with three facets each consisting of a small ring in the centre of a larger one. In the centre of the flower may be seen the indument of the pistil. The female plants are stouter and larger than the male plants, and have hollow stems, leaves here also opposite or alternate covered with small sessile vesicular-looking glands inter- 
spersed with hairs from which exude a resinous looking matter. Flowers inquite erect, simple and leafy at the base. Perianth Mono-petalous
Monopetalous enclosing the ovary at its base and covered with glandular puncture. Pistil one, ovary rounded with one orthotropal ovule with two glandular stigmas with a short style. Fruit a Caryopsis seed erect, having a colored thin fundus epikarpous doubled up with the radicle parallel to the plano-convex cotyledons. Some Botanists have described the plant from in India and there used as an intoxicating agent as a distinct species under the name of Cannabis Indian. But repeated comparison has not detected any specific difference between the Cannabis Sativa and this species. And according Balfour People, Pershing and many other distinguished Botanists consider them identical. The Indians variety no doubt secretes a larger amount of resin than
than the Europeans but a difference has been observable in this point even in India, between those of the plain and those of the hills. Perhaps the different mode of cultivation taken in connection with the difference of climate may in this country prevent the abundant secretion of the peculiar principle of the plant. Pereira mentions that Anderson of the Chelsea garden has pointed out to him as a distinguishing character that the Cannabis indica branches from the ground up to within two feet from the top, whereas the Cannabis Sativa forms three or four feet before it branches. The fruit also of the Cannabis indica is smaller and rounder. Pereira then adds, I have carefully compared the Cannabis indica both that grown in the
the Chelsea garden, and that contained in Mr. Wallis, herbarium in possession of the Linnaean Society, with the Cannabis sativa in Linnaeus collection, and I can not discover any essential distinction between them. The male plants appear to bear every respect the same. This agrees with a Lemma in the Metis Chafftains. Audemars in North Malabar, \( \cdots \) habitats extrema et nullum autumn data, serino in antem parum decidu, foliis thumus tamen et aprimovi plantus in soli maero apud eos observamus non infrequentem. In the female plants the flowers of the Cannabis indica were more crowded than those of common hemp. Admitting that the differences pointed out by Anderson do exist, they are not of sufficient importance to constitute a distinct species, but merely one of those varieties.
Varieties which are so frequently been produced by climate, soil, and cultivation. Dr. 6 Hauphnessy admits the identity of the Cannabis, Indica, Cannabis sativa but supposes that the active resin principle is not secreted by the plant when grown in high or southern latitudes, as in Europe. Though it is probable that this resin is secreted more abundantly in India, yet it is by no means proved that it does not exist in the hemp plant of Europe. On the contrary there is evidence that it does both from a resin having been detected in common hemp as well as from the fact of water in which hemp was steeped having been poisonous to cattle. The Cannabis sativa is met with in Eastern Commerce in two according to some in three different
Different forms. The two usually recognised are Gymjat or Churum the third which is merely a variety of the first is called Bhuni. The Gymjat consists of the entire hemp plant dried after flowering from which the resin is not removed. As sold in the Calcutta Bazaars it is in the form of long bundles about two feet long and three inches in diameter and each containing twenty four plants. It presents the appearance of the leaves, stalks, and spikes of capsules compressed together by a resonant expulsion. It is of a greyish colour with an admixture of green in some parts. In these spots there is great likelihood that the resin and expulsion has been more abundant and the plant is some frequently plagued with a blight.
When it reaches this country, and as found in our ships, it is rare that the bundles are so regular for being broken up and altered by the carriage. The Churnas is a resinous substance which during the hot season exudes from the leaves, stems, and especially the flowers of the hemp plant. In central India and in Nepal, it is said that the Churnas gathers put on leather dresses and walk briskly through the hemp fields and against the plants as much as possible. The resin being rendered very soft by the heat of the skin adheres to the dresses, from which it is afterwards scraped and made into roundish masses or balls. Dr. W. H. Crompton states that in Nepal, the leather dresses are dispensed with, the Churnas gatherers are now cradled through the fields and the resinous substance adheres to their skins. A fines kind of Churnas is carefully collected by the hands of men in Nepal. This is called the Dharma or Vranam Churnas and brings about twice the price of the other...
Megas Theoklos Rayea states that in Persia, the Churium is prepared by pressing the
resinous juice from the plant by means of
coarse cloths or the palms of the hand
then scraping it off and mixing it in a
pot with a little warm water. He considers
the Churiums of Herat as the best and most
powerful of all the preparations of the
plant, and one which is very highly esteemed
by many Asiatics serving them for both
wine and opium. It has in consequence
a variety of names applied to it, some
of which when translated are "pase of
fagarees", "leaf of helminis", "increaser of pleasure",
"syrter of decay", "cementer of friendship".
The Churium is made in irregularly rounded
masses or balls about the size of a small
pebble, the color of which is variable:
often it is of a yellowish gray, but
sometimes of a greenish or brownish
gray. These masses are very friable
and when broken across present a
distinct resinous luster and have some
what the appearance of impure
scammony. Churium is hard and brittle
at a temperature of 90° but is softened
and readily fused by heat.
Sto.
Its odour is fragrant aromatic and narcotic. Its taste like that of Gunjah is slightly warm, bitterish and acid. The same taste and odour are possessed by the other preparations of the plant though in a less degree. Chamos is not mentioned by Arisbe. It is commonly known that the Hashish of the Arabs is the same as Chamos, but either in Buckner's report day, the Hashish consists of the tops and tender part of the plants dried and collected after flowering. It has been used from time immemorial all over the East as a substitute for Chamos in inducing intoxication. It may be remarked that the word Hashish is the root of one English word Assasin. The derivation which is curious enough is as follows: During part of the seventh century Asia was overrun by a band of murderers at the head of whom was Hassan Fada. Each follower was obliged to murder any person then ordered by the chief to do so. They used the hashish to induce the state of frenzy when they committed their murders from which
which circumstances they released the name of Hashishii, corrupted by the Franks into Assassin, whence the name. The third form of Cannabis Indica, mentioned by some is Rinaq, a rare variety of the finest Gurnajah.

It consists of the larger leaves and capsules without the stalks. In a rare variety the large leaves are also removed constituting the rich adhesive gum from which Dr. J. Shapinssey directs the alcoholic extract to be prepared. The tops are spindle-shaped masses from 2 to 3 inches in length and of a color similar to that already described, as belonging to the Gurnajah. On close inspection it is easily perceptible that there are the bristles of ripe capsules adhering together by an exudation of a resinous nature. This form a variety of Gurnajah is richer in resin than the ordinary Gurnajah containing the whole plant. It is therefore worth a high price and should be prepared for making the preparations of Jamaica princess, some others have been...
to this variety of Gunjah, apparently inaccurately the name of Shah, Subject on Shideo. O Manjumasy and some other writers apply these names to an intoxicating drink prepared from Gunjah, but Annibé says, when speaking of the concoction of Gunjah a Madfom: Another indiciating preparation made with the latex of the Gunjah plant is Banga Chung It is in a liquid form and is chiefly drunk by the Mahometans in Calcutta. The Parsees & Pukrugs, who are comparatively temperate, use it but little. Banga is generally used in Hindustan to express an intoxicating beverage prepared from the Hemp plant; that it is occasionally employed somewhat vaguely to denote intoxicating drugs generally, but that it is never applied as a specific word to any particular form in which Gunjah is met with in Commerce. I shall now consider the Chemical History of the Cannabis Sativa. Our knowlege on this point is very imperfect. The leaves of the common hemp plant have been analysed by Pioche who
Recent analysis of Cannabis sativa occurred in the Agricultural Journal of the Highland Society of Scotland by Anderson who found it to contain fatty oil, 31.84 per cent. Alumina 22.60, Carbonate 32.72, Ashes 6.36, Water 6.47, Nitrogen 8.56. The latter he thinks probably belonged to the ash. The ashes consisted for the most part of Phosphate Earths & Alkalies.

Phosphate Earths 2.47, Alkalies 3.23.
The found Chlorophyll Glucer Phosph of Lime (impure) Brownish extracte
Bitter extracte
Chlorophyll col in Meth - 9.375
Chlorine Matter - 10.15
Alkumin - 6.775
Vegetable Alkumin - 8.0
Lejumine - 12.0
Chlorophyll col in Ethers - 24.75
Gun resinous extract - 5.0
Gummy Extract - 19.45
Extraxt - 16.875
Lime Phosphat iron - 9.5
Loss - 6.875
Dried at 200° F arb

It was also analyzed by Bohliz but
he failed in obtaining any organic
matter. Dr. C. Marchessy states
that the Gunjah yields to Alcohol
20 per cent of resinous extract consisting
of the resin and the green colouring
matter
matter called Chlorophyll, when distilled with a large quantity of water traces of essential oil pass over and the distilled liquid has the powerful narcotic odour of the plant. It has not been obtained in sufficient quantities to investigate its properties. I have performed a number of experiments on the Gunjah, and although their accuracy may be doubtful from my untried chemical manipulations and inexperience in organic analysis, I give the results as a link between the analyses of Schlesinger and Changmeas. Besides the resin and chlorophyll I detected lignin from and brown extractive matter when completely incinerated the Gunjah left 18 percent of ash which consisted of salts of Potash, Lime and Silica. When treated with Hydriodic and Nitric acid this ash evolved Sulphur and Hydroxyl rendering it portable that one or other of the alkalies had existed in the state of Sulphate. By destructive distillation the hemp yielded an Essential or
with the odour of the drug and an inflammable gas. Boil alcohol yielded
about 20 percent of extract of which 10 percent was Chlorophyll and 10
percent resin. The resin is soluble in alcohols and precipitated by acids
the reverse of which was the case
with the Chlorophyll. The Chlorophyll
may therefore perhaps act as a base
to the resin which as a class are acid
bodies. The resin of hemp to which
the name Cannabina has been given
has not hitherto been obtained pure.
Miss Smith Drujka in Eden being
satisfied that the resin contains all
the properties of the plant. They pre-
pared it by digesting bruised hemp
in successive portions of warm water
till the water that comes away is
colourless, and again for two days at
a moderate heat in a solution of
Carbonate of soda in the proportions
of one part of salt to 2 of Hemp.
Extruding shatter Chlorophyll and
invert ethereal oil being then removed
express and wash the residue, dry it
and exhaust by percolation with
rectified
rectified spirit. Agitate with an ounce of the finest rich or lime, for every pound of gum, and after filtration precipitate the lime by sulphuric acid; then agitate with the filtered liquid a little animal charcoal; then filter so as to remove the charcoal. Drain off most of the spirit then add to the residual turpentine twice its weight of water in a porcelain basin, and let the remaining spirit evaporate gradually. Lastly wash the resin with fresh water, till it comes away neither acid nor bitter, and dry the resin in thin layers. At the temperature of 90° Fahr. it is hard and brittle, but readily softens and melts on the application of heat. It is very soluble in ether, alcohol, and proof spirit, but less soluble in alkaline solutions and entirely insoluble in acids. It is soluble by heat in the fixed and volatile oils. When acted on by vitriol acid it is decomposed into the disengagement of misty fumes and is cor-

-verted
Verted into Calic acid. When thus acted on it is changed into a brownish red, but this perhaps may be owing to the presence of traces of Chlorophyll which is likewise turned brown when acted on by Nitric acid. This change is rapidly produced by Nitric acid especially if heat be applied. It is also produced but slowly by solutions of the Potassica, particularly if aided by exposure to the warm rays. The resin of the Cannabis sativa is soluble but sparingly in water. This accounts for the water in which Hemp has been steeped being poisonous to cattle. It certainly acts very quickly upon trunks of plants when allowed to come to the surface of a pool steeped very soon after the hemp had been put in. The resin is inflammable like other resins and burns with a smoky flame, having a characteristic odor. This resin is contained in the stems, leaves, flowers, and capsules, and according to some in the seeds. The seeds also derived by Bennett to have any narcotic pro-
The idea of their possessing such properties appears to be favoured by the statement of Herodotus, that the Scythians threw the seeds on hot stones and inhaled the smoke to produce intoxication, and by that of P. Commissi, that the confection eaten in Persia is prepared from the seeds. But this may be explained by supposing that the loved herb has been incorrectly used instead of hemp, for the ripe fruit consisting of the spike of capsules containing the seed, contains a large quantity of resin. The seeds contain a fixed oil which may be obtained by expression. I have next to speak of the adulteration to which the Cannabis is liable. The charred or the remaining extract might easily be adulterated with other resins, but nothing of the kind has been detected or pointed out. It is said states that an entirely different plant has been substituted for and sold as Gunjae, in Indian hemp. This is the Asphodelus Canadensis.
A plant belonging to the natural family Apongidae or Dopoanes. It is a native of Virginia & Canada and has received the name of Hemp from having a strong fibrous bark which is applied to similar purposes in the arts. The root under the name of Indian Hemp has a place in the United States Pharmacopoeia as a powerful emetic and cathartic, which properties are contained in the roots of the plant. The part which has been sold in this country instead of the Cypress, consists of the leaves and fruit to this fruit is a double follicle from 2 to 3 inches long and filled with numerous silky seeds. It is very easily distinguished from the small shaped tops of the Cypress affractuated together by the resonous diacrition. The existence of this Delation may in some measure account for the many of results observed by many who have experimented in the subject. The preparation of the Cannab recommended by Dr. E. Shapins is the extract made by the laudable.
The extract of the Cannabis—the alcoholic resinous extract of the Indian Hemp—is prepared as follows: “by boiling the dried resinous exudation from the tops of the plant in Spirit (Sp Gr 833) until all the resin is dissolved; then evaporating it at 212° Fahr. The extract thus obtained somewhat resembles unripe cannabis in odour. A convenient tincture is obtained by dissolving three grains of the extract in a dram of proof spirit. There seems to be no good reason for preparing the tincture from the extract instead of directly from the Gunjah. This latter would be decidedly a simpler and more economical process. The method of percolation and displacement should be employed as highly superior to boiling in Spirit as done by O'Shaughnessy in preparing his primary or preliminary tincture. The proportion of Hemp Spirit requisite to form a tincture of the same strength as O'Shaughnessy would be 2 Drahms of the Gunjah to everyounce ofproof spirit. It
might occasionally be advantageous to employ an ammoniated tincture which would render it a more diffusible stimulant and thus in some cases increase its action as an anti-spasmodic. As we have already seen, when considering the chemical history of the Cannabis, the ammonium would assist the spirit in dissolving the active resinous principle and would precipitate the Chlorophyll. The ammonium should be mixed with the spirit before percolation. When first this drug came into notice in this country from an idea of the propinuity of using great caution in trying a new remedy, most practitioners gave it in far too large doses, considering 10 drops of the tincture thrice a day as a large dose to begin with. This, along with its partly known properties by time accounts for some of them complaining that they experienced no physiological or therapeutic effects whatever from the remedy. The least dose that should be given to an adult is
25-30 drops and this may be repeated every hour or even in urgent cases every half hour. Of course watching the effect carefully. The dose may be increased to 1/2 drachm which should be considered the maximum dose, it being much safer to repeat the dose more frequently than to increase it beyond the amount.

The extract is to be given in a similar manner in doses of from 1/2 to 1 drachm. Dr. Houghton recommends in Tetanus, 1/4 drachm of the tincture, at intervals varying from 3 to 6 hours till the Paroxysm cease with marked good effect in almost every instance.

In Cholera, the heart, prevent in 1/2 drachm to 1 drachm and rectify the heat of the surface, and in Rheumatism in 1/2 drachm of the extract. It diminishes pain, increases the appetite, becomes great mental cheerfulness with apparent acceleration of the cure.

The Cannabis sativa is used popularly
in the East to cause Intoxication. The plant is smoked for this purpose in almost all the countries, the natives of which I formerly mentioned as using it but chiefly in India. The practice is there carried on to a great extent. The British Government of India have placed it under severe regulations, requiring shops where the hemp is smoked to be licensed, as taverns are in this country, and imposing on them a tax of 1 Shilling a day.

In Barbary, according to the statement of Cormack, it would appear that the plant is smoked here but in India it is only added to tobacco to increase its intoxicating power. The method of preparing it for this purpose is described by Dr. Thompson: One pinch recept b of ganja, and a little dried tobacco are mixed together in the palm of the hand with a few drops of water. This suffices for three persons. A little tobacco is placed in the pipe first, then a layer of the prepared ganja, then tobacco, then the fire above all. Cormack also had noticed the
Hemp at Petleva in Rastavi, state that he experienced slight increase of
the pulse, quickness of ideas, and pleasant sensation. I have myself
smoked the Gomja at mixed with
Tobacco as is done in India. The
smoke is cooler than that of Tobacco alone
and has a milder flavour which is slightly
aromatic - its odour is that of the drug.
The effects produced on the system are
slight acceleration of the pulse, more
stimulation of the nervous system than
is produced by Tobacco alone - rapidity &
windiness of ideas, and these two of a pleasant
nature. Two non-professional friends also
were advised to smoke it and without
having any idea of the effects they might
expect, and described nearly the
same as those given. The quantity
which is laid to be sufficient for three
was smoked by us, and produced
considerable excitement in all, which
only lasted a few minutes. The
next form in which the Tobacco
is popularly used is the beverage
called Chaa, Soujkee or Sidoor.
Dr. C. S. Shanker thus describes
its
its preparation and effects. Take about 340 Troy grains, wash them well with cold water, then rub them to a powder, mix them with black pepper, caraway seed, and an equal quantity of water. This is considered sufficient to intoxicate an habituated person. Half the quantity is sufficient for a cure. From either of these beverages, intoxication will ensue in half an hour, almost always the intoxication is of the cheerful kind causing the person to sing and dance to eat food with great relish and to seek affrodisiac enjoyments. In persons of a grave or gloomy disposition it occasion as might be expected an exhilaration of the natural tendency. The intoxication lasts about 3 hours when sleep intervenes. The sickness or nausea of stomach succeeds, yet are the vomits at all affected, next day there is a slight reddening, weariness of the eyes but no other symptoms.
With recording 'The Bhang seems sometimes to consist merely of the powder mixed with water as Dr. Cormach describes the practice of using it in Barbary to be. It is Bhang which the tunesup used to induce that state of frenzy termed in accounts of that country running a amchi, and which the mutineers at Delhi used to inflame their courage and enable them to face our troops; so a correspondent from that quarter mentions that the Bhang though fighting well under cover did not in general stand a charge with the bayonet, though there were exceptions to this, for a few days before a truce had been made by them when enlivened with Bhang when they fought like very Piémont. The third form in which the Bhang is used is the confection a Bradjon. This has the same effects as Bhang but in a much greater degree. Dr. James found it to produce fearness and pain in the head. He describes i
it as prepared from the seeds with Opium and various herbs. If this be correct it would seem to indicate, that the seeds possess the narcotic properties of the plant. Perhaps this and the account given by Stewart of the use made of the seeds by the Dahomey may be explained, by supposing that instead of seeds is meant, capsules or tops. Simile states the Madjourn to be composed of Cinchona leaves, Shee, Poppas heads, flowers of Thorn apple, powder of Dry Vomica, &c. 26 (Hist. gynai. f. 3.) which gives an recipe in the hemp confection. obtained from a manufacturer of it, of whom there are 7 in 8 in Calcutta. A tay of eight selling a day is impused on the shop, where it is eaten. The seeds are nutritions & have the remarkable property of changing the flaxen eye of bull & gold jinches, from yellow thread to black, and if they are fed on it for too large a time or in too large a quantity, there is in the National History of the museum.
Museum of our University a specimen of a Bullfinch with jet black plumage which I have little doubt was produced by feeding the bird entirely on Hemp seed. It may perhaps be conjectured that this may be part of the secret stated to be possessed by the Chinese of changing hair which has been hoary through age or which is naturally light, red or in short any colour excepting black by the use of internal or constitutional agents. We cannot consider the medicinal properties and uses of the plants. Before doing so it may perhaps be out of place to premise a few remarks as to the nature of evidence which ought to be received as to the efficacy of any remedy and the manner in which investigation for the purpose of determining this point ought to be carried out. Dr. Alison has pointed out the following difficulties which he meet with in endeavouring to estimate the real
real influence of remedies over diseases. 11. The natural tendency of most kinds of diseased action to spontaneous abatement, to which the action of almost all remedies is instrumental, but which is frequently counteracted by the effect of remedies used. 12. The unobserved action of other circumstances in the situation of patient, besides the use of any remedy of which the value is attempted to be established. If of the antiphlogistic regimen, when depurative remedies are used, or of change of season or of situation when tonic remedies are used. 13. The extreme diversity of cases, to which the same name and even the same Pathological description is constantly applied as to extent, intensity, or malignity and therefore as to the result to be expected, even when no remedy are used. 14. The diversity of constitution in which the same kind of diseased action may be excited, and the difference of result to be anticipated under any practice.
That may be employed in other
places to prove the efficacy of a remedy
be must show that a greater pro-
portion of equally severe cases recover
under it, or that if left to its
natural course, it will not.

That the

effect was not due to other remedies
exhibited along with it or to any
other external circumstance, for
in mere case of a disease stated
to be cured by any Therapeutic
means can be admitted as evidence
in the support of the efficacy of
such means if that the only true
basis for our decision must be in
the Physiological effect. Chemistry
and the natural classification
of plants enable us to form from
analogy with known drugs an
opinion as to the probable effect
of the new, and as long as we are worthy of
attention. If the proof be deficient
in any of the points mentioned
it falls to the ground, for it is a very
common fallacy to mistake the
natural tendency to health in
disease for the effect of one's
Treatment.
treatment. The efficacy of different remedies in disease is to be investigated in two ways: the theoretical and the empirical. In pursuing the former, we must be thoroughly acquainted with the nature of the disease, and where it consists, its various tendencies; what means will be most likely to counteract that tendency and what properties a remedy must possess to be useful. We must be acquainted with the remedy, with its Modus operandi. In what class of remedies it is most useful, what are its properties or physiological effects. Some especially we must know its action when variously administered, as to dose or in combination with other medicines, and in estimating the therapeutic use of compounds as a medicine we should reject the madroom of Alpies. The Danumace of mustard tripped and other curative preparational from Egypt which often contain Opium, pepper, myrrh, vincia, as these cannot necessarily modify its action.
The physiological effects of a remedy are determined by experiments on animals and on the human subject. Experiments on the lower animals with this view appear to me to be held in higher esteem than they really deserve. They cannot be deemed to be highly useful in determining whether a substance be poisonous and if so the symptoms of such poisoning or in forming an appreciation of their comparative resemblance with other known poisons and the pressing at what dose might be safely tried with the human subject. But further than this we can derive little or no assistance from them. Owing to the great differences in the development of their nervous systems, many poisons which act powerfully on one may have very little effect on another. This was and remains the case with many remedies which act on both often affect one and animals differently as Charcot states to be particularly the case with morphia. In experiments on man the cheap
Sources of fallacy are pre-conceived opinion and inattention to other circumstances which may have a share in producing the effect. In empirical observation on the therapeutic effects of remedies we have proceeded to these some fallacy all those mentioned by Dr. Moson in the passage formerly quoted—An imperfectly observed case is worse than useless, nor is it sufficient that the observer shall have watched the case sufficiently attentively to be himself satisfied, he must state his case with sufficient minuteness to enable his reader to satisfy themselves that all sources of fallacy have been guarded against. Great difference of opinion exists as to the nature of the stimulus and corrective action possessed by native sarcoty, thus Dr. One Murray and A. Thomson consider Sulfur to be primarily stimulant. J. Barksnide and R. J. Mbay as both
both - viz. - a stimulant to the nervous and circulatory systems, but a sedative to the muscles and digestive system, while opium acts upon it as either stimulant or sedative. Billing in the following passage shows how these two classes of remedies may produce apparently the same effect in a different manner. Sedatives as opposed to stimulants diminish the action of the brain at the same time repressing the nervous system, so that the proximate causes of delirium stupor or coma first operate. Stimulation is incasual, whereas the proximate causes of delirium and coma from stimulants is congestion or plethora. The following view, though purely hypothetical, appears to me to offer a simple explanation of the fact that narcotics as opium, are stimulants in small doses, and that stimulants or inebriants cause sleep or stupefaction in large doses. It must be admitted that we possess no
pure sedative or stimulant. We may therefore suppose all the remedies of these two classes to be compounds of a sedative + a stimulant principle in different proportions. If we suppose that the action of stimulants is of shorter duration than that of sedatives and that the effect of sedatives increases more rapidly in proportion to the dose (neither of which ideas are opposed to fact) we have an explanation of the apparent anomaly. Suppose for the sake of illustration that the power of a stimulant increases with its dose in the ratio of the square while that of the sedative increases in the ratio of the cube. It is easy to see how a mixture of these two which was at first stimulant might by increasing the dose become a sedative which should entirely suppress the stimulant action. The most proper method therefore of classification would be to place at one end of the scale the purest sedatives with which
me are acquainted rand at the other the finest stimulant rand to assagnate the other substances into intermediate places according as they appear to approach most nearly to the one or the other class. This arrangement might for convenience be divided into 4 classes - sedatives - narcotics - incipients - stimulants, but these pass so insensibly the one into the other that it is impossible to fix any precise boundary where the one begins and the other ends without any further attempt at definition - I shall now attempt to show whether in the substance at present under our consideration the stimulant or sedative properties prevail. To return to the Physiological action of Camphor - I shall first consider these as determined by experiments on animals. Dr. Glauchenuy performed a number of experiments on animals with this drug of which the following is an example - For pain of Repulitian Chorus dissolved in a spirit.
Spirit was given to a middle sized dog. In half an hour he became stupid and sleepy, lying at intervals, sitting up, wagging his tail as if pleased, when called upon he staggered to and fro and his face assumed a look of utter round and helpless abstraction; he ate food always greedily. These symptoms lasted about two hours, and then gradually passed away and in 1 hours he was perfectly well and active. The general results of his observations he states to be, that in none of these experiments was there the least indication of pain or any degree of convulsive movement observed. It seems needless to dwell on the details of each experiment. It suffice it to say that they led to one remarkable result—that while carnivorous animals (fish, dogs, cats, lions, Crows) are easily intoxicated with the drug—the granivorous, such as the horse, monkey, goat, sheep and cows were on the contrary not little affected by its administration.

Account of several experiments on Animals
Animals performed by him with Indian hemp obtained from Dr. C. Shagam. and also with that grown in the Chelsea gardens. The powder of Churrus in fine powder was mixed with the food of a small terrier - in quarter of an hour he appeared somewhat morose, in 15 minutes if let alone he would sleep as he eat nodding forward to either side as nearly to fall; when touched from this sleep he appeared quite well, but soon relapsed into it; when left to himself he was watched the whole day and no other symptoms presented themselves - a sample of the green alcoholic extract prepared from the Cannabis Indica grown in the Chelsea gardens was dissolved in a fluid ounce of spirits and thrown into the peritoneal cavity of a medium sized dog, but no effect was observed. The droppings of the powder of the female plant of Cannabis Indica grown in the same gardens were given to a small dog but no effect was observed. In due instance the exhibition of this drug produced paralysis in the hinder extremities of a cat.
...some to prevent his usual leap on
a wall in order to escape. This effect
was observed 24 hours after the extinction
of the cannabis which produced no
other apparent symptoms. In another
instance 2 cedils were attacked
with incomplete paraplegia after
an inmoderate use of a composition
of erotic Haschich. During last summer
I instituted some experiments on
terrier dogs, one of which was partly
white, the other which I shall call the
white dog; the other was brown which
I shall call the brown dog. About
6 A.M. I gave each of them about 120
grains of resin in their daily bread-
'fast. In five minutes I observed
in both a state of pleasing excitement
preceded by dearness from which
they might be roused but soon re-
collapsed if left to themselves till in
half an hour they both fell into a state
of complete insensibility—their con-
tractions remaining distinctly and
clearly appearances, the teeth jaws
of the white dog fell down—the pupils were
alternately contracting and dilating.
in about 6 minutes after perceive the effect of the drug a in 15 minutes after it was given the dog appeared to live for a while especialy to see if it would till the end. The principal post mortem appearances were great nervous effusions on the membranes of the brain and very great tense of the vessels of these membranes. The lungs were精益 with blood the blood in the heart semi fluid and I have lately learnt decomposition was rapid. In the case of the Brown dog whenever fever its countenance assume its ghastly and sickly aspect I had recourse to various stimulant remedies and four hours had elapsed with the aid of great effusions holding burnt feathers not cotton, and constant moving about before I could say he was out of danger and reaction fairly set in. The next day the dog suffered from lemonade and would not come where called upon he even snapped at his master fier when he showed him the pitcher.
him into the water, by which he
seemed greatly relieved. The day
after he seemed at slight variance
with his master, always remaining
at a certain distance from him and
looked very thankful on his master.
Going up and putting him on the
head, otherwise no bad results
followed. These experiments on animals
do not throw much light on the
nature of the action of the medicine
at present under consideration;
but this is the less to be regretted from
our having accounts of a great number
of experiments on man himself;
the results of which are of far greater
importance. The use already mention-
ed of the Cannabis as an intoxicating
agent among the natives of the East
might lead us at first to refer it
to the class of stimulants, a class inter-
mediated between the narcotics and
stimulants, and more nearly allied
to the latter. Dr. J. E. Shaffer states
that its general effects are the
mitigation of pain, remarkable
increase of appetite, invigoration
aphrodisiacal
aphrodisiacal excitement and great cheerfulness of mind. It also acts as a hypnotic in large doses, and he says (in a letter to the Royal Med. Chir. Sect., London) that the deep stupor and apparent coma which in the cases of Opium Hemlock & Belladonna would prove the certain precursor of death may be witnessed without alarm as if the effect of this new remedy. Its more violent effects were, a peculiar kind of delirium & cataleptic state. These effects are so curious & illustrating that I quote the following case in illustration.

At 2 P.M. a patient of the Resin of Hemp was given to a Rhenische Patient; at 4 P.M. he was very talkative, being loud in an extra supply of words and declared that he was perfectly well; at 6 P.M. he was asleep; at 8 P.M. he was insensible but breathing with perfect regularity. His pulse & skin were natural. His pupils contracted readily on the approach of light. Happening to lift up the Patient's arm
arm, the professional reader will judge of my astonishment when I found that it remained in the position in which I placed it, disregarding but a brief examination of the limb to find that the patient by the influence of this Dæmonia had been thrown into that strange and most extraordinary of all nervous condition into that state which so few have seen and the existence of which so many discredit—the genuine Catalepsy of the Philosopher. We raised him to a sitting position and placed his arms and limbs in every imaginable attitude, a motion possible could not be more phial or more stationary in each position—no matter how contrary to the natural influence of gravity in the part. To all impressions he was dreamlike almost insensible. We continued in this state till 11 o'clock, i.e., eleven hours after the exhibition of the drug, consciousness and voluntary motion then returned speedily.
Another patient to whom the same quantity of Cannabis had been given fell asleep but was roused by some device in the ward, he seemed to be highly amused at the statue-like attitudes in which the first patient was placed; on a sudden he uttered a loud peal of laughter and exclaimed that 4 spirits were springing with his bed into the air. In vain he attempted to pacify him - his laughter became more and more uncontrollable. He now observed that the limbs became more and more rigid, and in a few moments his arms and legs could be bent and would remain in any desired position. He was removed to a separate room, when he soon became tranquil. His limbs in less than an hour regained their wonted condition, and in two hours he experienced himself perfectly well, and expressly hungry. In no case which Dr. C. Rashleighs treated this remedy did it produce nausea or have any effect on the bowels.
Dr. Grimm as formerly stated took on himself the effects of Indian hemp by swallowing the powder of Cinjaha and eating the confection - the powder produced slight acceleration of the pulse, and a rapid succession of pleasant ideas; the confection produced these in a greater degree and likewise feelings of pain in the back of the head. He state that it is much used as an aphrodisiac in Barbary and suggests that this abuse of it may be the cause of the prevalent sterility among the women of that country. The accounts for this by supposing that the excessive indulgence in hemp thus induced may excite inflammation in the Fallopian tubes which may terminate in their complete obliteration by the effusion of lymph and is often observed in the dissecting rooms in the Fallopian tubes of prostitutes. The obliteration of the Fallopian tubes would of course prevent conception.
Dr. Macreuse of Glasgow instituted a series of 35 experiments with the Cannabis Indica administered in doses of from 6 drops to half a dram of the tincture and has given a detailed account of these in London Edinburgh Journal of Medical Science. These cases are extremely interesting and worth of the highest degree of credit as evidence, from the careful and scientific manner in which the observations were made and the detailed account given of their, and also from the fact that many of the results differed materially from those which the experimenters anticipated, thus removing the chance of error from any preconceived ideas on the part of the observer. The age of the patients varied from 15 to 32. The average age was 19 years. Slight effects were observed from the doses under 20 minims but the majority of the doses were from 30 to 40 minims. The period at which the effects occurred was about
about an hour and a half
from the time of administration.
The effects observed were as follows:
In almost all the cases, the first
symptoms observed were of the
nature of micturition. Six of the
patients showed the ordinary
signs of micturition in a marked
and decided manner; their countenances
and in fact general appearance were those belonging
to a state of intense distressed,
and they laughed or uttered
and sang alternately and
talked incoherently. In two cases
incessant, involuntary laughing
was produced and in five the
individuals talked very in-
coherently without showing any
other signs of micturition. Hypnotic
and amodyne effects were observed
in most of the cases. In 10 cases
which were exactly those when
inches under 20 drops had been given
there was none or only a slight
stimulant effect. As few other
observers seem to have noticed
any
Any effects from such small doses a doubt naturally arises whether the relief from pain, the feeling of depression and the sleep were really owing to the abolition of the drug, and not to some other cause which may have escaped notice, and this doubt is strengthened by the absences of the symptoms of excitement observed in all the other cases. In almost all the other cases often the symptom of insensibility had lasted for some time: the patient began to feel slightly drowsy and would fall asleep and another perfectly sober, but one did not go to sleep for 5 hours, another had very little sleep during the night, and a third did not feel in the least drowsy. The effects on the pulse were generally to produce acceleration, but in 3 cases it was diminished in frequency, and in one individual scarcely perceptible. The medicine produced sensation of hunger in the majority of cases and of
one patient it is stated that she ate
voraciously, aphrodisiac effects were
produced in one case. The state of
the pupil in the individuals under
the influence of the drug was varying
in ten of the cases chiefly those in
which large doses had been given.
Dr. Lamie observed spasmodic
symptoms. In six of these there was
a feeling of constriction in the throat
and a dread of choking. In one
there was tightness of the precordial.
In two the lower jaw moved convulsively
in four there was slight spasmodic
twitches and in one case
opisthotonos and convulsions were
produced. These convulsive movements
so far as I am aware, have not been
observed by any other experimenters
and I shall afterwards endeavour
to show that if they had been more
carefully examined into, they might
probably have been found to be
identical or nearly so with the
cataleptic state described by Dr.
O'Flaughnnessy. Dr. Lamie also
observed in many of the cases
after effects which have not been observed by most writers and are positively derived by some as headache, madness, thirst, and a bad taste in the mouth which occurred in almost all cases and vomiting which occurred in 6 out, Dr. Glendinning has published a paper containing the results of his experiments with the Cannabis India. We cannot derive from it much information with regard to the Physiological effect of the drug as the cases are by no means stated in sufficient detail. The whole paper likewise shows that the author had undertaken the experiments solely for the purpose of establishing the prevalent opinion that hemp was a substitute for opium possessing all its advantages and none of its disadvantages. He found that in all doses from 12 minims to a drachm and a half it was a powerful narcotic and say nothing of the preliminary stage of experimentation. He likewise overlooks
in an extraordinary degree the remarkable effect on the appetite which holds such prominent a place in the description of the remedy by others, merely stating that it does not cause the least degree of anorexia or indigestion. The only point in which Dr. Glendinning entirely agrees with other writers on the subject is in stating that it acts without causing constipation, nausea or other effect unison of indigestion and without headache or stupor.

Professor Miller, who has tried the Cannabis in two cases of Tetanus, considers it superior to Opium as an antispasmodic but refers to it as a hypnotic and anodyne in other cases it has the effect of remarkably increasing the appetite and digestion does not seem to be impaired. The depigmentation, though dark and offensive, contained no unchanged nejesta.

The craving for food of all kinds was stated to be at times absolute. Various Prof. Miller states...
States that in the subsidence of the Tetanic symptoms, the hemp produced a quite untenable state of the circulation and that it did not produce constipation or any unpleasant effect. The celebrated Theodore Gauthier related to Dr. Prouet that the intensity of the sense of sound produced by the taking of Indian Hemp is most startling. The poetic language mentioned by him it is impossible to translate so as to give an idea of this highly curious sensation. In the course of the drug, he actually heard the noise of colors. Green, yellow, red and blue sounds reached him in waves perfectly distinct, as a flash overthrown in the creation of a foot of smoke. As the sound of thunder, My own voice to quote his own words appeared to be so loud that it2

icate fur that cluing the wall around
around me or of making me burst like an explosive shell. More than five hundred clocks sang out the hour with a harmonious tinkle sound - every curious object sounded like the notes of an harmony or Edian harp. I swam in floated in an ocean of sound. Mr. Berthault's experience of the effects of Cannabis indica is curiously the converse of the preceding. One day while under the effect of a large dose a band of a regiment of dragoons suddenly began to play beneath his window. Never he adds, had he known what music was until then. His perceptive faculties were so great that he could distinguish the part taken by each instrument in the band, and he experimented in a remarkable degree that extraordinary materialization of ideas which large doses of the drug produce and concludes from his experience that there is nothing like music.
for illustrating the power of the drug. Dr. Lithop in the Gazette des Hopitaux states that in one evening he took 50 centigrammes of the hashish at 2 A.M. he awoke in a state of insupportable anxiety with palpitation of the heart, darting before the eye to which everything appeared like the colour of fire, then the objects began to grow and assumed gigantic dimensions then all again became dark and their suddenly as it were dipped in blue. Palpitation of his heart returned, and he perceived the sound of bells and other noises; even small hallucination presented themselves in the morning he had a feeling of lightness in his head pulse and disfigurement in his countenance, which however soon ceased away. Professor Christian describes the effect upon himself as follows: on taking Mr. Robertson's extract
once for toothache. I found that about 4 p.m. taken about 3 P.M. caused in an hour cessation of pain, a pleasant
numbness in the limbs, followed by rapid succession of unconnected ideas and impossibility to follow a train of thought. Frequent intervals of sleep and a slight increase in the force of the pulse. Next morning there was an ordinary appetite and thirst. No loss of memory or extreme apparent restriction of time, but no peculiarity of articulation or other effect, and these symptoms lasted till 2 P.M. when they ceased entirely in a few minutes, after taking lemonade again. He says in my professional experience, it has produced sleep, relieved pain, and arrest ed spasm. I have never observed any disagreeable effect during or after its action except that in one instance it
it excited as its operative commenced an alarming sense of occasional incisions in the veins, but this might perhaps arise from other circumstances. A friend of my own took twenty drops of the tincture of Indian hemp of unknown strength in a little water and waited for 20 minutes without any effect resulting. She then took 30 more and waited as in the first instance. This also had no effect until having taken three successive doses of 30 drops each to use his own words the following ideas occurred. Raising ideas passed through my mind to a measured time, ideas so powerful and likewise so absurd that I laughed at the very conception of them. The echo of my watch sounded in my ear like the sound of a bell when I walked, anything seemed out of light, and elastic that I fancied I stood upon air.
I then threw myself upon a sofa when ideas of the most exquisite kind passed through my mind which lasted for about half an hour and gradually passed off without any subsequent depression. Another friend has taken experimental doses of the tincture of cannabi indica commencing with 15-20 drops and increasing it to 30-35 from the dose under 20 drops he experienced no effects. There might perhaps be | frictiveness of the circulation, but this might be due to other causes. Does above 20 drops caused marked acceleration of the pulse with extreme rapidity of vivid and pleasing ideas. Sometimes with mental excitement corresponding to the first stage of intoxication. When taken at bedtime they caused the sleep to be more restful than usual. The last time he took the drug the symptoms were peculiar and sick

(Handwritten notes continue on the next page.)
I shall therefore give the ex-
periment in detail as he de-
bribed all the symptoms at the
time. Immediately on rising
in the morning he took 35 drops
of a tincture prepared by dis-
solution of 3 grains of the resins
extract in one measure of spirit;
about 20 minutes after this he
took breakfast, which, however
merely consisted of a slice of toast
and a cup of coffee, so as not to
interfere with the action of the
medicine. In about a quarter
of an hour effects began to show
themselves which may be divided
into 3 stages each of which lasted
for about 2 hours. During the
first stage there was some quicken-
ing of the pulse which was very
much increased by any slight
exertion and then in a few minutes
after it became so rapid that it
was counted with difficulty.
In the D stage there was
Considerable
considerable exhilaration of the spirit. He experienced an almost uncontrollable desire to laugh even at the slightest cause, a great degree of talkativeness, and a general feeling of relish for anything. About the end of this stage he became excessively hungry and was obliged to eat occasionally. The Canadia seems to have improved digestion at the same time for though not in the habit of eating anything between breakfast and dinner he did not feel his appetite for dinner in the least impaired. Shortly after this commenced the third stage he felt a peculiar superlative taste in the mouth and a tingling sensation in the tongue. There was an intense pain in the back of his head which occasionally darted to his forehead and a loud ringing in his ears. These symptoms were accompanied by an indescribable rapid succession of vivid ideas and an utter inability
negativity of directing his attention for too seconds at the same object. Withstanding that he was pain-
fully conscious of this wandering of his mind the he was extremely anxious to overcome it. These symptoms
occasionally interrupted the place being supplied by other remarkable phenomena which appear to me
to be an approach to the state of catalepsy observed by Dr. 6. Langmore. A feeling of numbness and dull pain
took possession of certain muscles or sets of muscles on the one side of the back of the neck on or
of the calf of the leg. He described the muscles thus affected as feeling somewhat tense, and on calling
into action the antagonistic musc
- e 1 he perceived a greater degree of resistance to motions than
normal. This state of tension
for there was no spasms that
in an irregular manner caused the different parts of the body
it could be induced in any muscle
by moving its rapidly three times.
by pinching or pressing it & sometimes by directing attention to it for a short time. When he attempted to curtail he felt a slight degree of tightness sometimes which appeared to be of the same nature as the tension of the muscles. During the whole time he described the rapidity of his ideas as such that the fastest speaker seemed slow, and he could apparently carry on two trains of ideas at the same time speaking on one subject and thinking at the same time on one totally different. These alternating paroxysms of pain in the head and tension of the muscles gradually became less severe, and in about 2 hours and a half after their commencement it between 6 & 7 hours after the tasting of the hemp they entirely disappeared. Then the pain in the head was very violent he was obliged to close his eyes to cover them with his
his hands, but throughout the whole period of the action of the drug he said he had not the slightest feeling of consciousness. He experienced no after effects of any kind whatever. The symptom produced was one of such a disagreeable kind that he never repeated the experiment. From what I have myself experienced the effects of Hemativis were in one occasion about 6 a.m. I took 50 drops of the Tincture prepared as in the former experiment. In the space of 10 minutes afterward no physiological effects were manifested except a slight acceleration of the pulse. I then breakfasted. While doing so I could not refrain from indulging in hearty fits of laughter, though perfectly conscious of its absurdity. I answered the questions put to me incoherently, immediately forgetting that they were ever asked. My pulse during this excitement could
could scarcely be counted. Immediately after, I felt a peculiar
aptitude for motion in my legs. I set out for the purpose of taking
a walk, but the operation of the
drug had such an effect that I
was obliged to return in about
5 minutes. On entering the room
the inmates remarked that I
appeared as if intoxicated. My
response was "Rascals! I have
only been taking a little medicine.
This did not seem to satisfy them,
as my spirits seemed very much
exhilarated and I was still talk-
ing in a rambling incoherent
manner. My conduct seemed
to frighten them as they took
the first opportunity of maki-
ng their exit. After their departure
though I held only breakfast
an hour before, I felt very hungry
which compelled me to take
a little more food. I then went
out with pistols not in hand, in-
tending to have some sport, but
the time occupied seemed long
and
And the distance at this only 600 yards seemed interminable but on reaching it my foot was rather unsteady and I cast the line in a very unimportant manner. The result was that I soon gave it up and lay down on the bank to rest while thus stretched sleep overtook me and on awaking a short time afterward I felt quite well the rather cold which considering the circumstances was just what might have been expected. But another occasion about 3 P.M. I took a drop of the liquor in about 20 minutes the stimulating and exhilarating effect manifested in the former experiments occurred—these symptoms altogether disappeared after drinking a bottle of lemonade with the exception that I had such an enormous appetite that I could not refrain from taking food. From what I had stated the following appears to be
the legitimate conclusion with
regard to the actions of Indian
Hemp - that it proceed especially
at certain points of its actions
decidedly stimulant properties
almost equal to those of alcohol.
and that its narcotic powers are
but slight. That it quickens
the circulation and exhilarates
the mind. It exaggerates the per-
ceptions of the senses or emotions
of the mind existing at the time.
That it is an aphrodisiac for
although these effects have not
been observed in Europe, they are
stated to be quite common introdud
by all who have seen the remedy
used in the East. That it has
a remarkable effect in increas-
ing the appetite. This is a phenom-
non on which all writers are
agreed. That it has no fixed
effect on the pupil. That if taken
at bedtime, it acts as a hypnotic
but that when it does not cause
sleep it produces headache +
a disagreeable taste in the
mouth.
mouth. In some it produces a state like 'Delirium Tremens.' In others it produces a state similar to catalepsy. Dr. Lawrie speaks of 'Spasms,' but it appears to me that what he calls spasms may have been the catalepsy of Dr. B. Shoughnessy in a milder degree and a partial form. The sense of constriction of the throat which he mentions may have been occasioned not by any spasmodic contraction but by a difficulty in swallowing the saliva from the constriction of the hyoid and action successively as they do no ordinary deflection. The state of tension of the muscles observed in this experiment would if general be perfectly adequate to produce the cataleptic state which has been described by Dr. B. Shoughnessy but doubted by so many others! There seems also sufficient evidence to establish that after the action of Cannabis is over there is no headache nausea bad taste in the mouth indigestion.
In constipation produced by it at least if sleep is preserved.
I have met with any case in which Cannabis was known to have caused death in man by poisoning but I feel induce to quote the statement of Dr. Gardner in which it had nearly proved fatal. He says in the year 1848 while acting as surgeon to an East Indian in Calcutta, a Rice ship had taken around one night to an adjoining ship, and from the time it was next amuck of the man as to the nature of the case supposed it to be Cholera as it was raging rather freely among the there. However when I arrived on board the following scene presented itself. The surgeon second officer and the custom house officer were in a state of narcotism from the effects of the extract of hemp which the former had made and persuaded the other two to try with him as an experiment.
experiment thinking to have
its stimulating and exhilarating
effect only of the drug, but the dose
was too strong and I learnt from
the surgeon who was the least affec-
ted of the three that the dose to each
had been about three grains of
the extract and it appeared to act
according to the peculiar idiosyncra-
cy or constitution of each. They were
each in a state of collapse. The
surgeon with the aid of stimulants
sufficiently recovered to explain
what matters stood. The second
officer regained internal and
by external stimulants as well as
cold affusions, and the poor custom
house officer having a weaker
constitution had nearly died but
2 hours had elapsed when the
aid of tempertume, tempertume and
affusion, ammonia and constant
stirring about before he awoke
out of delirium. Reaction estab-
lished, they all suffered from
headache and lassitude next
day. I also feel induced to quote
Tremorres - priuring
the following statements of MD C. Bell relative to some cases in which he suspected it to have been employed. During the short time I lately had charge of the native General Hospital several patients were admitted with the following symptoms: a wild and timorous expression of countenance, feature, inability to answer a question or speak, a low hurried muttering, great restlessness, could not be induced to remain quiet on their cots, great dilatation of the pupils which were quite insensible to light, conjunctiva more or less vascular, pulse always frequent, generally inclining to fullness, tongue dry, sometimes dark colored and furred, their somewhat hollowed out in the air, cut with difficulty, were much frightened upon taking medicine, in no instance in shape of the disorder.
disorder were epaumas, rigidity of the limbs, vomiting or purging observed, ametics seldom operated, never freely, although in some cases repeated festively in one half a dozen if sulphate of lime was given on admission furnished even after by 4 or 5 ounces once three times repeated at short intervals without producing the slightest effect either in the stomach or bowels. Cold affusion was generally employed with considerable benefit. The symptoms were generally decreased gradually in the course of 1 or 24 hours, but in some instances remained unaltered for a much longer period. The patient more than observed to fall into a deep sleep after the exciting effects of the drug went off and were to all appearance completely restored to health after moderate rest. The dilation of the pupils however continued a considerable time after the other symptoms had subsided. In no instance did the complaint prove fatal. When the patient recovered their senses they complained of giddiness only.
In questioning them, they invariably stated that they could recollect no thing further than that some person unknown to them in the road, generally in un Frequented places who gave them something to eat either native greenly or 1 coconut or dates, in every case they had been robbed of all their money & clothes if they bore anything forth stealing. That some narcotic poison had been administered to a limited extent there cannot I conceive be a doubt, but as author I have conjectured several similar symptoms. Those of the Solanaceae approach the nearest particularly Datina Strumosa, & 1 Belladonna, the latter I believe is not vicious on this side of India I have not been able to procure or portion of what was eaten and respect I did not use the stomach-pump in order to examine and ascertain the nature of the contents of the stomach. A very intelligent medical friend suggests the possibility of
of its being a preparation of the Gunjah plant (Cannabis sativa) perhaps Majun. The principal ingredient of which is stated by Arabic are Gunjah leaves, other juice, poppy head flowers of the autocomplete Patma symonirgum and of the mix Veronica Stygar, adding a liquid made from the leaves of Gunjah reduced to an extract or otherwise concentrated. We have now proceeded to consider in what diseases we have reason to believe that the Indian Hemp may be advantageously employed as a Therapeutic of use. The disease in which it has been administered and the indications it has been intended to fulfill are many & various. It is believed to be of the greatest importance in Hydrophobia & Tetanus. Of the first of these diseases viz. Hydrophobia I believe this disease has hitherto defied all remedies, I never heard of any one being cured of this disease after
after the malady had fairly declared itself by its characteristic symptoms; but a case of typhusia has been treated with cannabis indica by Dr. 6. Thomsonsey, in which the symptoms were very much mitigated although the fatal termination was not prevented. Sertrum the case from Dr. 6. Thomsonsey is from that.

By his own desire water was brought in a metallic vessel which he placed and brought near his lips. Never can I forget the indescribable http:// of the paroxysm which ensued. It abated in about 3 minutes and continued that still. Not having the unhappy man the besought his servant to apply or strengthened cloths to his lips. Intelligent and brave he determinedly panted the contact of the cloth and in a few seconds thought in an appalling agony permitted some drops to trickle on his tongue. But they remained a second struggle which with a due share of the callousness of my profession I could not stand by or contemplate. Two grains of

 Hemp
Temporarily an ascot filled mass were ordered every hour after the third dose he felt commencing in toxification, he now chattered cheerfully on his own case and displayed great intelligence and experience in the very disease with which he was visited. He talked calmly of drinking but said it was in vain to try, but he could bring an orange this was brought to him and he proceeded in swallowing the juice without any difficulty. The Camisia was continued till the 6th day when he fell asleep and had some dreams next - Early however the morning, and morning colleagues my assistant was called up think the temperature again repeated and again by the 3rd day the cheering alleviation of the previous day was witnessed. We ate a piece of arganana and again drained the juice - he purposely freely of some instilled nicer and permitted a pugnacious succession to be administered. His pulse was nearly normal, the skin normal
in every respect, his countenance unhappy. From day thus passed away the hemorrhois continued when he fell asleep or amounting the papillary returned but were again almost immediately augmented as at the first. Meanwhile purgative emetics were employed and he passed freely of solid food and once drank water without the least suffering. But about 3 P.M. of the fifth day he went into profound slumber the heathing slightly stellums, in this state he continued and without further struggle death terminated his suffering at 4 B.M. on the 27th December. Dr. Shangrummy adds "at least one advantage was gained from the use of the remedy the awful malady was stripped of its horrors if not less fatal than before it was reduced to less than the scale of suffering which precedes death from some to ordinary diseases. This he hoped that subsequent experienced may join the to correct. From a want of a sufficient knowledge of the Pathology of Hydrophobia"
Hydrophobia the Empiricæ is the only method which can be followed in investigating the efficacy of any remedy in this disease. Meanwhile, as far as our Knowledge goes, Camphor Indica is alone worthy of trial in Hydrophobia than any other remedy with which we are at present acquainted. The disease in which Camphor is believed to be of the greatest importance is 'Tetanus.' The treatment of it with other medicines has been a failure. Hippocrates says 'Ετεραίον ουκ ενεργειν ουκ αρσεύων Τέτανος' [Tetanus superinvenit or a wound is mortal; but another of his aphorisms is 'Ωκοβοι υπο τέτανου ἄλεσονται εἰς τεσσάρας ημέρας' [They who are seized with Tetanus die within four days], but he adds 'ὑπὸ τέτανος διάφορον εἵεις ὑγιεστὸν.] If they get over this period they recover. Let us now briefly review a few cases and see what success has resulted from its employment. Dr. Shawberry gives the result of twelve cases of Tetanus in which Indian Hemp was administered.
administered and of these eight recov ord and one was almost cured but died of dysentery. Three of these were in his own practice and shall abridge his account of them.

In the first case Iettarns empeining from dysentery from the use of a mixture known before to show itself on the 24th Dec. on the 26th (the case being deemed hopeless) the hemp resin was administered at first in 2 grain doses every 6 hour, after 1 grain dose every second hour. The usual irritating effects were produced - the pain were mitigated and finally ceased on the 11th. The dysentery in this case however caused a fatal termination on the 23rd. In the second case Iettarns showed itself on the 11th December resulting from injury caused by the kick of a horse. After an ineffectual trial of large doses of tarpentine antritol 2 grain doses of hemp resin were given on the 26th. He left the hospital cured on the 28th.
24th December he having taken
1.5 g of the Resin or about 4 yrs
daily. The 3 case was a female
aged 25, admitted on the 11 December
on account of Tetanus, which had
drawn itself 3 days before. The cons-
equence of a cut on the elbow
received a fortnight previously. Im-
pentine and castor oil having been
tried without effect 8 grains of
hemp resin were given on the 11 and
12th at bedtime. On the morning
of the 18 she was in a state of com-
plete catalepsy and remained so
till evening when she became
sensible and a Tetanic paroxysm
occurred. The hemp was continued
in 2 grains doses every fourth hour
as the case improved the dose was
administered until the 25th Feb
when the patient left the Hospital
cured. Mr O'Brien had five
of the cases in his practice, he
gave the resin in 10 gr doses with
the best results. Three of these see
Tetanus treated in the
Police Hospital at Calcutta
by
by Dr. O'Brien under the use of the Arsenatics one died and two recovered. The last case mentioned by Dr. O'Connell occurred in the practice of his cousin Mr. Richard O'Shaughnessy. The latter occurred during the pregnancy of a child of seven on the 22nd of August, the 16th of the 14th. The pain was caused by a reflected hydrocele. Three times every second hour, with the effect of inducing intoxication and suspending the symptoms, and the patient ultimately recovered. Two cases of Syphilitic Tetanus were treated by Dr. Graham in the Indian Hospital in the Bombay Hospital, one successfully the other with advantage. The first patient was a boy who was admitted with a lacerated wound of the right leg on 15th Feb 1841 when the 1st March following Tetanus was established. He then got a pain of the extract of Kramp every second hour and in 2 days 2 pains. Under this treatment the
the opiums atated and he ultimately recovered on the 1st April of the same year. The other case was a cachectic man who came in with tetanic spasms of three days' standing arising from a puncture on the sole of the foot by a nail. He was put on the extract of henna at first with great relief, but the ultimate Lanting and died. Mr. Gunther gave 60 lbs. of iron to a tetanic patient on board the hospital ship Dreadnought with- out any observable effect. Mr. Hare of this city tried it in 2 cases of tetanus this winter, one of which ran its course so quickly as not to admit of the action of the remedy. The other was that of a woman on whom tetanus supervened ten days after being trussed in the skin by her husband. When admitted into the hospital, her lower jaw was closed her gums were ulcerated and her breath had the mercurial stink but she denied ever having had syphilis which taken mercury. Her pulse was weak and Frequent, her face livid, her skin warm and covered with profuse perspiration. She was ordered to africa.
of Cannabis Indica several times a day, on one occasion when she put the medicine, the effort of swallowing brought on a paroxysm, during which her breathing was almost ejection, and during the greatest part of the time she was insensible. Her face still lived. The abdominal muscles were stiff. During this time her pulse became weaker and weaker, till at length her breathing became regular. Her pulse rose, she opened her eyes, asked where she was, and stated the self no pain. During the following day she had several fits—feel very weak. The stomach resents the Cannabis, and the fits still continuing and being able to taste no nourishment dies of exhaustion. In the last case I am inclined to give to the Cannabis indica at least some amelioration of the disease—but partly from treadness and partly from the state of the stomach. She not being able to retain the medicine, ultimately broke, but the succession of fits was so quick that the medicine did not cause its Therapeutic action for the rule is not to give Cannabis in Stamos.
When a palsy is coming on as it is apt to cause vomiting and very likely death by choking Prof. Miller has tried the Cannabis Indica in several cases of Tetanus. In four Cases of Darnatic Tetanus treated by him with Cannabis Indica in which the remedy was pushed as to produce narcosis the cure of them although gradual was complete. In three cases Prof. Miller regards the part of the Therapeutic agency to the remedy from its power of controlling the immoderate muscular action prevalent in that disease from the tolerance of the remedy while the disease lasted and from the apparition of the symptoms when it was omitted. In other cases he has seen it fail to cure but never to relieve the spams. The remedy was administered in these cases in doses of three grains of the extract and 50 drops of the tincture repeated half hour when as to produce permanent narcosis I am inclined to give the preference to the tincture over the extract as a form of administration in Tetanus because it is a more diffusible fluid and can affect more the sooner produced by it than the extract.
great object here being to keep away the perversions of the disease, I think it 
might even be given as an enema if 
the stomach will not retain it. 
Many more cases might be added 
in which Cannabis has been adminis-
tered in Tetanus with various success 
but the cases already mentioned I 
think are sufficient. I have men-
tioned 21 cases of Tetanus in which this 
Medicine has been used. In two of 
these no effects were produced either 
apparently from the medicine not 
being genuine the doses being too small 
or the cases having run their course 
too quickly to admit of the action 
of any drug. In all the other 19 
cases considerable amelioration of 
the symptoms were produced. 15 
of these have ultimately recovered 
and of the five who died one was 
carried away by another disease viz 
'Dysentery.' This shows considerable 
efficacy in favour of the drug in 
controlling the disease, yet we must 
regard a greater number of cases 
to enable us to judge of its merits.
compared with other remedies. To those who are wont to consider opium and other narcotics as the
practitioners' keystones in the
treatment of tetanus, the recommendation of a new remedy like Cannabis indica in which the stimulant pro-
properties decidedly predominate,
may appear admirable. They should
recollect that we know nothing
of the pathology of tetanus and
consequently that our treatment
of it must be purely empirical.
Cannabis is not the only stimulant
medicine which has been occasionally
employed in this disease with success.
Ethyl, Cimprin, wine, Brandy and
Ammonia are all stimulants and
have been used. Tonics & stimulants
have been recommended by Drs.
Wright-Currie-Rush Bright and
others. Whereas there are signs of
debility either at the commence-
ment or during the course of the
disease they are directly indicated.
Rush pins'twine & black peelly in
with occasional success. The

Renewable
remarkable case given by Dr. Currie the patient took 140 bottles of Madeira wine in less than a month taking generally every 24 hours 4 or 5 bottles, with two pints of brandy. Some ale & treacle and 2 & 1/3 grains of Laudanum. Laudanum and other antifebrics were also used. The recovery was slow. Spirits, wine & ale may be given in large quantities without producing their accustomed effect, although Dr. Bruce has reported when other medicines had failed to have kept the patient 14 days in a state of intoxication. The case of a perfect recovery described by Dr. Bruce was mentioned as being cured at a meeting of the Royal Medical Chirurgical Society of London by the free administration of alcoholic stimulants. In one of these cases more than three pints of brandy were given every 24 hours and during the eight days in which the disease was at its height the patient took two
Gallons of brandy beside beef tea, wine, jelly &c. Staff Surgeon Lightbody, and army medical officer who had seen a great deal of Traumatic tetanus during the Peninsular war states that the treatment in the only successful case he ever saw consisted in the administration of large quantities of ale and water. Carminative has been given in Plagid and according to the following statements in Dr Forbes Thesis on that subject, with decidedly beneficial results. He gives an account of the treatment employed by Dr Antony during the Alexandrian Plague of 1856, chiefly at the Arab Hospital of Rasid Pasha and the European hospital, in conjunction with the late courageous and enthusiastic Rigaud of 44 patients submitted to simple dietetic treatment. These died, 5 Europeans, 5 Turks and 15 Egyptians, while the rest all Arabs (5) recovered. This gives a mortality of 25 per cent. Emetics were chiefly employed, in 17 cases of which 4 Europeans
Europeans and 4 Arabs died, and 2 Arabs and a European recovered. This gives a mortality of 4 per cent. Seven cases were treated with half grain doses of Phosphorus, and of these five Arabs recovered and one Arab and one European died. The Phosphorus appeared to come to induce remission. The deaths in this treatment were as 28 is to 100. The actual cautery was applied over the spine in 20 cases in the last stage and as a dernier ressort, but as might be expected, under such circumstances only 2 Europeans and 3 Arabs recovered. The mortality in this case was 75 per cent of 11, hence and almost hopeless cases in which Hassche in Carmatie was employed, seven recovered but in some bleeding was necessary to subdue Pneumonia, apparently induced by that remedy. This gives a mortality of 36 per cent. The average mortality in Plague, generally stated to be 80 per cent under all kinds of treatment.
and in the practice of Dr. Arter, on the occasion alluded to, it was 40 per cent. Yet under the use of the Marshiaka, only 36 per cent of the most desperate and hopeless cases proved fatal. It is admitted that the treatment of Ophius might be the same as that of typhus fever, and that support of the system and the use of stimulants are required. Cannabis indica seems really therefore to be of use in this disease, Dr. 6 Shanshnessy recommends the administration of Indian hemp in cholera. The few cases in which he tried it were mild and therefore the results are inconclusive, but they seem to be in Dr. 6 Shangnessy's hands promising and deserving the practitioners' attention. He advises 10 drops of the tincture to be given every half-hour, his experience leading him to prefer small doses of the remedy in order to excite rather than create the patient's distress. Reasoning from its stimulant action on the nervous system, all those have already some months ago recommended
recommended a trial of Indian Hemp in Asiatic Cholera. The officers of health at Cairo, Mr. Wllie, administered it in ten cases—in four of these the patients were motionless. They all died, but in one individual, the pulse which had for some time been imperceptible returned to the point after the exhibition of the drug. It was fifteen or less per sec. they all recovered; lastly it was again exhibited to 3 individuals whose state had become desperate, but in much larger dose than before. All recovered and it is worthy of record that one of the three was the officer of health. Mr. Wllie whose life had been despaired of. The above evidence if it does not establish the efficacy of Indian Hemp in Cholera is sufficient to suggest its further trial. From its influence over the nervous system, it appears to possess a certain power in counteracting the effect of the cholera poison, more especially if given early. When the advantage is apparent by its almost immediately raising the temperature.
temperature of the skin. Amongst all the various methods for the cure of malignant chylora, the use of stimulants in some form or other greatly predominates, and we may therefore conclude that it as a stimulant of the nervous system combined with the stimulants of the vascular system already in use is worthy of a trial. The use of Cannabis may by an analogy be extended to the 3rd stage of small-pox with typhoid symptoms and in short to all cases in which the administration of wine, brandy and similar stimulants is generally considered to be indicated. For Hysteric Anginae Pectoris and Spasmodyic Asthma Cannabis would doubtless prove a valuable anti-spasmodic; the antispasmodics generally used in these diseases parted more of the nature of stimulants than narcotics. Diffusible stimulants are likewise preferred in which reason I strongly recommend the use of an ammoniated tincture. Following are the following cases of the employment of Cannabis in Asthma.
Asthma, one of my annals long accustomed to Batley's solution at night on account of Asthmatic attacks was persuaded by me to substitute the hemp in little quantity on two or three occasions and the effects reported were similar and equal to those previously experienced from Dimphic and Batley balsam. 

Sleep with intermission by empyre Dysphoec. The following case of Hypertension treated by Indian hemp is related by Dr. Persin. Four grains of an alcoholic extract of junnah were given to a girl aged 14 in the London Hospital affected with a convulsive disorder pertaining both of the character of Chorea and Hypertension. She was troubled with a spasmodic action of the Diaphragm and had been for several days and nights without sleep. About 2 am hour after taking the 3'd of the same dose the spasms entirely ceased and the patient complained of Vertigo, Headache. The pupils not paralyzing affected the pulse was 93 soft & regular, the feet into a tranquil sleep which lasted...
lasted several hours. When she arose
she had no spasm but complained
of headache and vertigo. The pupils
were dilated and skin moist; on
raising her up to take another pill
she complained of great faintness
and broke into a profuse perspiration.
The faintness having subsided she
again sat up; then the pulse sud-
denly rose from 95 to 130. Some days
after convulsive movements appeared
in the muscles. The extract was again
resorted to, but its effects were never
more than palliative; and although
the dose was increased to 20 grains
three or even three, it failed to pro-
duce any effect. Though Miss Recce
seems inclined to doubt the efficacy
of the remedy, it seems to have first
decidedly beneficial in the first
instance. Dr. Taylor of University
College, London treated a case of
Chorea successfully by ipecacuan-
haeump which I shall now mention.
The disease occurred in a young woman
aged 20; it was caused by a fright or
admission hallucinations in a state
of mithry and constant constipation, headache with sunken expression and pale cheeks and lips. She could slightly control the mithry of her limbs. They nearly ceased while sleeping. Her murmurs heard with the sounds of the heart. Pulse 96-100 increased heat of surface. The catarrh appeared at 18:30 and had always been regular. The joint to drops of the right hand. Cannabis juice thrice a day. After two doses the movement diminished and soon ceased. She commenced the medicine on the 13th and was discharged on the 17th.

This case is certainly in favour of the drug, even although it produced some giddiness and drowsiness. Yet one must remember the disease was of short duration; the age of the patient, her catarrh being regular, renders it more likely to yield to treatment.

Dr. 6. Shaughtnessy-Lawrie, & Glendinning. Speech of Cannabis as useful in Rheumat."
last I commenced the use of Hemp in small doses. In the case of a Phrenatic female aged 22, admitted 14th July 1845, she had been out of a place for 12 months, and had been a month ill with pains of the knees and elbows, particularly those of the knees, which prevented sleep and were much complained of. She had had opiates at night, solution of Potassium nitrate and Prussic acid during the day, her sleep being still disturbed and her head aching. I gave her hemp, at first the new medicine had no importance, after the 2 night I doubled the dose, then tripled it and the patient the passed good nights with the halve strength; it was which the took from the 15. July to her discharge a few days afterwards. The perspired every night after its use, her tongue was cleaner in the morning her appetite good and she took it regularly making a meal when she was discharged well. Though this and similar cases are far from proving the efficacy of Cannabia...
in Rheumatism, they appear to be sufficiently encouraging to warrant its further trial. Perhaps it may have such an effect in impeding objects as to prevent the formation of Lactic acid on which Rheumatism is believed to depend. Cannabis indica appears to possess the remarkable power of increasing the force of uterine action during labour and uterine discharge. Dr. Olmarius (Chapeliz.) seems to have been the discoverer of this new action of the drug. The tincture of the resin is the best preparation for this purpose, and may be given in doses of 1 to 4 drops three a day. Its effects are generally complete in 3 or 4 doses. In a midwifery case which I had last summer, the woman was in her 20th child when I first saw her—the first stage being ended with complete obliteration of the 00 uter, in fact the uterus was in a state of complete inertia—she had no pains for about an hour before I saw her, waiting a short time
time with the same result. I gave her 2 drops of the mixture of
Camphor, Joseph and not perceiving any effect from that dose in five
minutes I repeated it when the stage commenced with much uterine
contraction & the child was born.

I was led to use it in this case from an extract of Dr. Alex. Christian's paper
thesis on the subject in the Edinburgh Medical Journal, showing from its
efficacy in this case in promoting uterine contraction. It is certainly
worthy of a trial for, although the pains were very severe at the time
sent on favourably. In this case it
is worthy of remark that I did not
perceive the slightest physiological
change in anyone way during labour
or afterwards. Neither side did it
appear to possess any anaesthetic
effects. Dr. Alex. Christian says the
Hemp has one superiority over the
effect of opium & that is that its action
is observed sooner it is sometimes
from the above statement, if the case,
although I would not employ Indian Hemp.
Hemp in all labors, I have little doubt but that it may be serviceable in causing the uterine tract in tody's labors. In strictures as in detames there seems to be a great tolerance for the remedy. In a severe case of hemorrhage after delivery, which I had this winter in which there was clots of blood and portions of the after birth in the womb I applied cold water dressing externally with friction without any benefit whatever. I then gave her 20 drops of the tincture of the seeds of cannabis indica once per diem for 3 days with a satisfactory result. A medical friend had a case of severe uterine discharge after abortion, which had continued for some weeks, unattended by the usual remedies in such cases. He gave 20 drops of the tincture of cannabis indica for 4 days after the 7th day the discharge had entirely ceased and continued so afterwards. These cases are certain in favor of the remedy yet they
will require a greater number of cases to prove its efficacy in their experience. Obstetricians say that it is too uncertain in its action to be of any use as an expectorant; it has sometimes no effect at all, and when it does raise from the improperly used but they must remember that our knowledge in naturopathy is very imperfect and that there are few remedies in it that have been used and many act peculiarly. I was informed by a friend that after a few drops of urine did not act successfully in some cases of the uterus, he asked the question of the urine. Judging from the urine, it perhaps may act best in those cases in which expectorant of urine does not produce its effect. But it will require future experience to determine its utility or innocuality as an expectorant in Par...
It has also been employed in the treatment of Menorrhagia or severe uterine discharge, and from the experience we have yet had it appears to act with a most beneficial effect. The employment of it appears to be most beneficial in those cases where the Menorrhagia is the result of excitement of the Uterine function. I believe this remedy was first tried by Dr. M'Leire of Chapelizod. Subsequently by Dr. Churchhill I have met with extraordinary success both in the relief and the rapidity of cure. I have employed this remedy in five cases of the above disease in my Dispensary practice, which I shall abridge in order to show the beneficial effects of this remedy. The first case was that of a female aged 26 who had been enceinte for some years without any family, her catamenia had not appeared for six weeks, but for some time previous it was irregular with occasional leukorrhea. When she was suddenly attacked with a severe menorrhagia the charge was continued to
occur excessively every ten days, and two months after its first appearance she applied for medical aid, when I ordered her ten drops of the tincture of Cannabis Indica 3 times a day. She continued to take this for about a fortnight by which time the discharge had ceased and since that she has become pregnant. The second case is that of a female, the mother of several children, who was suddenly attacked with an excessive and vigorous discharge at the usual menstrual period. The usual remedies were applied for two days without any effect. 10 drops of the tincture of Cannabis Indica were given 3 times a day with which marked effect that on the evening of the second day the discharge had ceased. It is right to observe with regard to this case that the discharge appeared to be induced from excessive mental anxiety and that although no external remedy were employed after the Cannabis had commenced the relief the
Recurrent palpitation during the whole time of the exhibition of the Medicine - I case is that of a female who laboured under Menophagia in the month of Feb 1857. She was under medical treatment until the month of May in the same year at which time she was perfectly cured. She remained pretty well till December of the same year when an attack of a similar nature again occurred immediately gave her 10 drops of the tincture of Cannabis Indica three a day and in exactly eight days she said she was perfectly well. In this case on the second day I had to reduce the dose from 10 to 6 drops as the former appeared to produce uneasy sensations. The only other case which has appeared to come under my own observation which I shall now mention is that of a female who laboured under acute Menophagia which came on suddenly about a fortnight after she had a miscarriage.
And which was greatly increased in consequence of the anaemic condition which she was in in this case. I ordered her good diet and rest in the recumbent position on the second she told me the febrile heat from having lost so much blood; then I gave her the Cannabis indica in the usual dose, in a week the discharge had almost ceased and with subsequent emunctory diet the woman ultimately put well. These are all the cases which I can bring forward as having come under my own observation, but from enquiring at various medicines men they might be multiplied indefinitely; indeed one medical gentleman affirms that he has found it not only useful in Menorrhagia but in cases of excessive hemorrhage after parturition and in several instances he believes he has the life of his patients to the employment of this Medicine — Cannabis has been given by.
Dr. Gluent firming in cases of fever with apparently good effect. The dose was 1/2 an action of the \textit{Tricaine} of bedtime, he states his reasons as follow: From its being a low nervous fever, pathologically allied to Delirium Tremens and by suggested the use of some narcotic more effective in consolidating sleep than any of the Venous kinds. The indications appear plainly to have been to administer stimulants, regarding the use of which in the Typhoid Fever of London Dr. Warton makes the following remarks. In the form of fever which has lately years been common in the most crowded and unhealthy parts of London I am sure that the use of opium in this sustaining system a little too early is much less than the risk of beginning it a little too late. If plenty of beef tea does not suffice you must give the patient poisons that sometimes is a considerable amount of even brandy.
the Egg-flip of the Pharmacopoeia for instance - the Pratuse Vini Galliici. In administering Cannabis with this view in mind, it would be more consistent with ordinary practice to give it in repeated small doses. In Delirium Tremens the line of treatment most generally received at present is the free use of the sedative preparations of Opium in combination with powerful stimulants. It is frequently said that the accustomed stimulant should be given, but the necessity of this is by no means proved. The real object in the treatment appears to be practically to wear down the nervous system from the required habit of needing the aids of stimulants. From its conjoining Narcotic with powerful stimulant effects Indian Hemp would probably fulfill the same purpose as the administration of Opium & Alcohol. So therefore appears to be of a trial in this disease, from its remarkable effect in improving the appetite, Cannabis
Cannabis ought frequently be most advantageously used combined with Symic Medicines. The chief part of the efficacy of this class of remedies is generally believed to consist in their infusing the digestive powers. Cannabis which possesses this property in such a marked degree seems to have some right to a place among them, it is stated that the Hemp itself used in India to strengthen the body. We may therefore I think attribute to it some degree of Symic Properties indeed Dr. Glandouring has found it useful in the last stage of Rheumatism. Cannabis juice has also been employed in infantile convulsions with success in several instances given along with equal parts of Tarpentines, in doses varying according to the age of the Patient. My friend Dr. J. Ridley of this city has been remarkable cases effected in this way even in those of the blood complex in regular forms. It has also been recommended in Hooping and Bronchial Catarrh, I have had with various success in several instances but
but several observers say, when given in these cases, it is apt to cause congestion of the lungs, and as it is possible by resection in any thing that causes a flow of blood to counteract that tendency, it will be no reason why it should be rejected in these diseases. They tried it in Bronchial Cataract in doses so as to produce its Physiological effects without receiving any bad symptoms, but certainly with no alleviation of the disease, but which afterward yield easily to the usual remedies in such cases. So Conclusion, to turn up our account of the Therapeutics of Contraband Medicine, it appears that it may be used as an anti-pyramidal in Hydrophobia, Tetanus, Infantile convulsions, as a stimulant in Typhus, Malignant Cholera, Pneumonia, and Delirium Tremens, as a Diaphoretic - Tonic & Anodyne in Chronic Phthisis, Chronic Rheumatism, Diseases as a Tonic & Stimulat
in Dyspeptic Complaints, and would further experience determine it to be a stimulant of the muscular fibers of the Uterus in atony or uncomplicated inertia of that organ. Its discovery will be a great addition to the Pharmacopoeia.

I have now completed the task I purposed for myself, that I have said is confessedly simple and imperfect yet that is no discredit to the medicine which I have attempted to treat of. For it appears to be a remedial agent which deserves a more extensive trial of further investigation than any remedy hitherto entered upon into Medicine.

FINIS