

R I T R I



# EAST INDIA (Consumption of Ganja)

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EAST INDIA (CONSUMPTION OF GANJA).

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RETURN to an Address of the Honourable The House of Commons,  
dated 21 February 1893;—for,

“ COPIES of the following PAPERS relating to the CONSUMPTION of GANJA and other Drugs in *India*; (1.) DESPATCH from the Secretary of State for India to the Government of India, No. 59 (Revenue), dated the 6th day of August 1891; (2.) LETTER from the Government of India, No. 212 (Finance and Commerce), dated the 9th day of August 1892, with Enclosures; (3.) DESPATCH from the Secretary of State for India to the Government of India, No. 99 (Revenue), dated the 20th day of October 1892; (4.) REPORT on Cultivation of, and Trade in Ganja in Bengal by Mr. Hem Chunder Kerr; and (5.) ARTICLE on Hemp or *Cannabis Sativa*, by Dr. Watt, C.I.E., Reporter on Economic Products with the Government of India, published in the Second Volume of the ‘Dictionary of Economic Products of India.’ ”

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India Office, }  
2 March 1893. }

ARTHUR GODLEY,  
Under Secretary of State for India.

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(*Mr. Caine.*)

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Ordered, by The House of Commons, to be Printed,  
3 March 1893.

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COPIES of the following PAPERS relating to the CONSUMPTION of GANJA and other Drugs in *India*; (1.) DESPATCH from the Secretary of State for India to the Government of India, No. 59 (Revenue), dated the 6th day of August 1891; (2.) LETTER from the Government of India, No. 212 (Finance and Commerce), dated the 9th day of August 1892, with Enclosures; (3.) DESPATCH from the Secretary of State for India to the Government of India, No. 99 (Revenue), dated the 20th day of October 1892; (4.) REPORT on Cultivation of and Trade in Ganja in Bengal by Mr. Hem Chunder Kerr; and (5.) ARTICLE on Hemp or *Cannabis sativa*, by Dr. Watt, C.I.E., Reporter on Economic Products with the Government of India, published in the Second Volume of the "Dictionary of Economic Products of India."

— No. 1. —

Consumption of Ganja in India.

Despatch from Secretary of State for India to the Governor General of India in Council; dated 6th August 1891.

(Revenue—No. 59.)

My Lord Marquis,

I FORWARD for the information of your Excellency's Government, copy of a question and answer in the House of Commons concerning the consumption of ganja in India. I shall be glad to learn your views as to the effects of this drug on the consumers thereof, and also whether you propose to take any further steps for restricting the consumption.

I have, &c.  
(signed) Cross.

Enclosure in No. 1.

House of Commons Question.—16th July 1891.

Mr. Mark Stewart,—To ask the Under Secretary of State for India whether his attention has been called to the statement in the "Allahabad Pioneer" of the 10th May last, that ganja, "which is grown, sold, and excised under much the same conditions as opium," is far more harmful than opium, and that "the lunatic asylums of India are filled with ganja smokers":

(2.) Whether he is aware that the possession and sale of ganja has been prohibited for many years past in Lower Burma, and that the exclusion of the drug was stated in the excise report of that province for 1881-82 to have been "of immense benefit to the people":

(3.) And whether he will call the attention of the Government of India to the desirability of extending the same prohibition to the other provinces of British India.

*Reply.*

(1.) The Secretary of State has seen the statement mentioned in the question.

(2.) Yes, Sir.

(3.) In Bengal, the province where ganja is principally consumed, the price of duty-paid ganja has been greatly increased during recent years, making its consumption more expensive. The Secretary of State will inquire whether the Government of India will propose to take further steps to limit the consumption.



— No. 2. —

LETTER from the Government of India, Finance and Commerce Department (Separate Revenue—Excise), to the Secretary of State for India, No. 212; dated the 9th August 1892.

My Lord,

WE have the honour to acknowledge the receipt of your Lordship's Despatch, No. 59 Revenue, dated the 6th August 1891, forwarding a copy of a question and answer in the House of Commons concerning the consumption of ganja in India, and asking for an expression of our views as to the effects of this drug upon the consumers thereof. Your Lordship also inquires whether we propose to take any further steps for restricting its consumption.

2. The whole question now raised was, as will be seen from the enclosed copy of correspondence, exhaustively discussed in the years 1871 to 1873 in communication with local governments and administrations. In 1871 the deleterious effects of ganja were brought to the notice of the Government of India, and local governments were directed to inquire into the truth of the allegations frequently made that the abuse of the drug produces insanity and other dangerous effects; and they were requested to report whether it would be expedient to restrict the use of ganja or to suppress the cultivation of the hemp plant altogether. A summary of the opinions of local governments will be found in the Resolution of the Financial Department, No. 3773, dated the 17th December 1873. Upon a careful consideration of these opinions the Government of India came to the following conclusion in regard to the effect of the drug:—

“It does not appear to be specifically proved that hemp incites to crime more than other drugs or than spirits. And there is evidence to show that, on rare occasions, this drug, usually so noxious, may be usefully taken. There can, however, be no doubt that its habitual use does tend to produce insanity.

“The total number of cases of insanity is small in proportion to the population, and not large even in proportion to the number of ganja-smokers; but of the cases of insanity produced by the excessive use of drugs or spirits by far the largest number must be attributed to the abuse of hemp.”

The resolution sanctions the prohibition of the cultivation and consumption of ganja in Burma. This step was not considered practicable or expedient in India; but local governments were requested to “endeavour, wherever it may be possible, to discourage the consumption of ganja and bhang by placing restrictions on their cultivation, preparation and retail, and imposing on their use as high a rate of duty as can be levied without inducing illicit practices.”

3. We are inclined to believe that ganja is the most noxious of all intoxicants now commonly used in India. But, even if the absolute prohibition of the use of the drug could be enforced, the result might be to induce the use of still more noxious drugs. India abounds with plants, growing wild, from which drugs can be procured which are more deleterious in their effects than ganja. One such plant is the *dhatūra* (*Stramonium*), the seeds of which are already used to intensify the narcotic effect of *bhang*, a liquid preparation of hemp-leaves; and we apprehend that if the use of ganja were suppressed altogether, *dhatūra* might be largely resorted to by the poorer classes as a means of satisfying their craving for stimulants.

Apart, however, from the objection just mentioned, we believe that it would be impossible to enforce in India a prohibition of the use of ganja. That drug is produced in Native States, and the difficulties in the way of preventing its import from them, if the supply in British India were cut off, would be immense. It would not, moreover, be possible to suppress the supply in British India; the hemp plant grows readily in India, in many places wild without cultivation of any kind, and it would be easy for any one addicted to the use of ganja to grow a plant or two in the enclosure of his own house and in nooks and corners which would be safe from observation and from the risk of detection.

4. The question in the House of Commons suggests that, as the possession and sale of ganja has been prohibited for many years in Burma, it is desirable that

that the same prohibition should be extended to other Provinces of British India. The analogy of Burma does not, however, apply to India. When the prohibition was enforced in Burma, the drug was very little used by the native Burmese, its consumption being almost entirely confined to coolies and other immigrants from India; and the cultivation of the plant in Burma, which had never been extensive, had virtually ceased, the consumers being dependent on importations for their supplies. In India, on the other hand, the practice of ganja smoking has existed from time immemorial, and among certain sects of Hindus, ascetics and religious mendicants, hemp-intoxication is habitually indulged in; and, as explained in the preceding paragraph, it would be impossible to suppress the growth of the plant.

5. But, although we consider it impracticable to enforce the absolute prohibition of the use of ganja, we fully recognise it as our duty to restrict its consumption as far as practicable, and we have distinctly laid down the policy to be pursued in respect of this drug in our resolution of the 17th December 1873 already quoted.

6. The Annual Reports of Excise Administration show that the subject has since been continually before local governments who are making every possible endeavour to minimise the evils and discourage the use of the drug wherever it is a source of danger to consumers.

In illustration of this remark we will now state briefly what measures have been taken to regulate the trade in ganja in two provinces for which full statistics are available, namely, Bengal and Assam, and how far such measures have been successful in diminishing the consumption of the drug.

7. Up to 1853 the duty on Bengal ganja was levied either (1) by selling by auction the privilege of sale, or (2) by charging a fixed duty for each shop. From that year a fixed duty of Re. 1 per seer was levied, and the retailer was bound to pay the amount of tax on a certain minimum quantity per month, whether he succeeded in disposing of it or not. In 1859-60 the duty was raised to Rs. 2 a seer, but levied only on the actual quantity passed out by the wholesale dealer to retail shopkeepers. In 1864-65 the system was introduced of charging duty at three different rates, according to the manner in which the drug was prepared and packed, so as to equalise the incidence of the tax on the excisable portion of the drug. The rates then fixed and the increases subsequently made, the quantity of ganja exported from the producing district, the quantity consumed within the province in each year, and the number of shops licensed for its sale, are shown in the following table:—

YEAR.	Rate of Duty per Seer.			Quantity Exported from Rajshahye in Seers.	Quantity Consumed in Seers.	Number of Shops.
1864-65	-	-	-	402,738	335,893	4,328
1865-66	-	-	-	386,528	322,079	4,314
1866-67	-	-	-	303,693	302,178	4,314
1867-68	Flat	-	2 0 0	421,213	338,087	3,833
1868-69	Round	-	3 0 0	460,254	337,708	4,073
1869-70	Chur	-	4 0 0	407,718	346,637	4,437
1870-71	-	-	-	461,158	387,226	4,749
1871-72	-	-	-	492,320	398,875	4,934
1872-73	-	-	-	422,410	343,723	4,694
1873-74	-	-	-	408,850	325,027	4,398
1874-75	Flat	-	2 8 0	421,716	313,212	4,394
1875-76	Round	-	3 0 0	352,847	295,569	3,262
1876-77	Chur	-	4 0 0	341,855	298,342	3,130
1877-78	-	-	-	390,607	327,875	3,247
1878-79	-	-	-	241,961	218,466	3,244
1879-80	Flat	-	3 8 0	270,628	205,496	3,210
1880-81	Round	-	4 0 0	317,513	224,012	3,411
1881-82	Chur	-	4 0 0	316,350	257,249	3,488
1882-83	From 1st April 1882 to 31st July 1887.			294,695	225,937	3,271
1883-84	-	-	-	328,001	235,241	3,298
1884-85	Flat	-	4 8 0	280,567	231,924	3,196
1885-86	Round	-	5 0 0	282,418	228,706	3,033
1886-87	Chur	-	5 0 0	315,238	250,566	3,046

YEAR.	Rate of Duty per Seer.	Quantity Exported from Rajshahye in Seers.	Quantity Consumed in Seers.	Number of Shops.
1887-88	From 1st August 1887 to 19th September 1889. R. A. P. Flat - - - - 4 8 0 Round - - - - 6 4 0 Chur - - - - 6 8 0	328,981	262,014	2,949
1888-89		319,281	256,531	2,926
1889-90		303,355	244,050	2,819
1890-91	From 20th September 1889 to 31st March 1891. Flat - - - - 4 8 0 Round - - - - 6 4 0 Chur - - - - 7 0 0	299,600	243,637	2,586
1891-92	From 1st April 1891 to 31st March 1892. Flat - - - - 5 0 0 Round - - - - 6 4 0 Chur - - - - 7 0 0	Figures not yet reported.		—
1892-93	From 1st April 1892. Flat - - - - 6 0 0 Round - - - - 7 4 0 Chur - - - - 8 0 0	—	—	—

From the above statement it will be seen that by successive increases of duty the consumption of ganja in Bengal has been checked with great effect. The duty at present levied is more than double what it was in 1864-65. Notwithstanding the large increase of population since that year, the quantity of the drug consumed has fallen of by 27 per cent., while the number of shops has been reduced by 40 per cent.

8. In Assam the rates of duty have generally followed the rates which prevailed in Bengal from time to time. The quantity of the drug consumed and the number of shops licensed for its sale since the constitution of the province as a separate administration are given below :—

YEAR.	Quantity Consumed in Seers.	Number of Shops.
1874-75	34,729	447
1875-76	32,582	465
1876-77	25,356	267
1877-78	25,679	248
1878-79	23,481	271
1879-80	22,826	251
1880-81	23,333	282
1881-82	22,975	286
1882-83	23,175	294
1883-84	25,526	319
1884-85	25,395	314
1885-86	20,626	317
1886-87	26,678	321
1887-88	24,525	327
1888-89	27,090	328
1889-90	28,012	327
1891-91	29,139	282

The above figures indicate that there have been two stages of consumption, one of steady decline, *i.e.*, from 1874-75 to 1881-82, and the other of increase, *i.e.*, from 1882-83 to 1890-91. The increase during the latter period has taken place in spite of repeated enhancement of duty. The Chief Commissioner

sioner, in paragraph 20 of his Resolution on the Excise Administration Report for 1890-91, suggests two possible reasons for the increase—(1) the increase in the foreign coolie population, and (2) the measures taken to suppress the sale of wild ganja which grows luxuriantly in the Assam valley, any success attending those measures necessarily tending to increase the consumption of duty-paid ganja. He has, however, directed the Commissioner of Excise to make further inquiries on the point. Still it will be seen that, compared with 1874-75, there has been a decrease in consumption, while the number of shops has been reduced by about 36 per cent.

9. After a careful consideration of the circumstances of the trade in ganja as exhibited in the Excise Administration Reports, we have come to the conclusion that it is unnecessary to do more in regard to that drug than to persevere in the policy, which was adopted in 1873, and which has been followed since that year.

We have, &c.  
 (signed) *Lansdowne.*  
*Roberts.*  
*P. P. Hutchins.*  
*D. Barbour.*  
*A. E. Miller.*  
*H. Brackenbury.*  
*C. H. T. Crosthwaite.*

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*Schedule of Papers.*

Government of India (Revenue, Agriculture, and Commerce) Circular to all Local Governments and Administrations, Nos. 338 to 347, dated 10th October 1871.

Letter from the Chief Commissioner, Central Provinces, No. 444-27, dated 7th February 1872.

Letter from the Chief Commissioner, Central Provinces, No. 2953-105, dated 19th August 1872.

Letter from the Chief Commissioner, Mysore, No. 5651-46-G., dated 23rd February 1872.

Letter from the Government of the Punjab, No. 502, dated 10th April 1872, and enclosures.

Letter from the Government of the North Western Provinces, No. 92-A., dated 20th April 1872.

Letter from the Resident at Hyderabad, No. 6, dated 20th April 1872, and enclosures.

Letter from the Chief Commissioner, British Burma, No. 725-65, dated 3rd May 1872, and enclosures.

Letter from the Chief Commissioner, Oudh, No. 3073, dated 8th July 1872, and enclosure.

Letter from the Government of Bombay, No. 3069-53-G., dated 3rd August 1872, and enclosures.

Letter from the Government of Bengal, No. 3863, dated 31st August 1872, and enclosures.

Letter from the Government of Madras, No. 1141, dated 9th October 1872, and enclosures.

Letter from the Government of Madras, No. 66, dated 22nd January 1873, and enclosures.

Government of India (Financial) Resolution, No. 3773, dated 17th December 1873.

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Enclosures of Despatch No. 212 of 1892.

Nos. 338, 339, and 341 to 347, dated 10th October 1871.

From *A. O. Hume*, Esq., c.B., Secretary to the Government of India, Department of Agriculture, Revenue and Commerce, to the Secretary to the Government of Madras, Bombay, North Western Provinces, Punjab, and Chief Commissioner of Oudh, Central Provinces, British Burmah, Mysore and Coorg, and Resident at Hyderabad.

It has frequently been alleged that the abuse of ganja produces insanity and other dangerous effects.

2. The information available in support of these allegations is avowedly imperfect, and it does not appear that the attention of the officers in charge of lunatic asylums has been systematically directed to ascertain the extent to which the use of the drug produces insanity.

3. But as it is desirable to make a complete and careful inquiry into the matter, the Governor General in Council requests that \* will be so good as to cause such investigations as are feasible to be carried out in regard to the effects of the use or abuse of the several preparations of hemp. The inquiry should not be simply medical, but should include the alleged influence of ganja and bhang in exciting to violent crime.

The police and magistracy will doubtless be able to furnish information upon this branch of the subject.

4. If the result of the investigation should seem to call for any action in the direction of restricting the use of ganja and the other preparations of hemp by enhancement of the duty upon consumption, or of limiting, or even prohibiting, the cultivation of the plant, it is desirable that the Government of India should be in possession of the advice of the several local governments concerned as to the expediency and practicability of any such measures.

5. The question should be considered in all its bearings, and with reference to the whole policy of the Excise Department.

\* Madras  
Bombay  
North Western Provinces  
Punjab  
Oudh  
Central Provinces  
British Burmah  
Mysore and Coorg  
Hyderabad

} with the permission of His Excellency  
the Governor in Council, you  
with the permission of his Honour the  
Lieutenant Governor, you  
} you

matter, the Governor General in Council requests that \* will be so good as to cause such investigations as are feasible to be carried out in regard to the effects of the use or abuse of the several preparations of

No. 340, dated 10th October 1871.

From *A. O. Hume*, Esq., C.B., Secretary to the Government of India, Department of Agriculture, Revenue, and Commerce, to the Secretary to the Government of Bengal.

It has been frequently alleged that the abuse of ganja produces insanity and other dangerous effects.

2. The information available in support of these allegations is avowedly imperfect, and it does not appear that the attention of the officers in charge of lunatic asylums has been systematically directed to ascertain the extent to which the use of the drug produces insanity.

3. But as it is desirable to make a complete and careful inquiry into the matter, the Governor General in Council requests that, with the permission of His Honour the Lieutenant Governor, you will be so good as to cause such investigations as are feasible to be carried out in regard to the effects of the use or abuse of the several preparations of hemp. The enquiry should not be simply medical, but should include the alleged influence of ganja and bhang in exciting to violent crime.

The police and magistracy will doubtless be able to furnish information upon this branch of the subject.

4. If the result of the investigation should seem to call for any action in the direction of restricting the use of ganja and the other preparations of hemp by enhancement of the duty upon consumption, or of limiting, or even prohibiting, the cultivation of the plant, it is desirable that the Government of India should be in possession of the advice of the several local governments concerned as to the expediency and practicability of any such measures.

5. The question should be considered in all its bearings, and with reference to the whole policy of the Excise Department.

6. There seems reason to believe that the Bengal ganja, grown in the district of Rajshahye, differs from, and may be more deleterious than, the ganja produced

duced in other parts of India, and I am accordingly directed to request that, with the permission of His Honour the Lieutenant Governor, inquiry may be instituted on the point.

7. It appears likely from Section 15 of Regulation VII. of 1824, that some inquiry may have been made at about the period of the passing of the Regulation into the effects of the use of hemp and its preparations. The records of the Board of Revenue, Lower Provinces, or of your office, may perhaps contain some papers on the subject, with the substance of which the Government of India would desire to be favoured.

No. 444—27, dated 7th February 1872.

From *J. W. Neill*, Esq., Officiating Secretary to the Chief Commissioner, Central Provinces, to the Secretary to the Government of India, Department of Agriculture, Revenue, and Commerce.

I AM directed to acknowledge the receipt of your reminder, No. 111, dated 1st February, calling attention to your letter, No. 344, dated 10th October last, in which it was requested that an inquiry might be made into the question of the use and abuse of ganja and other preparations of hemp, the tendency of indulgence in the use of the drug to produce insanity, and to excite to violent crime.

2. As yet, opinions and reports have not yet been received from all officers whom the Officiating Chief Commissioner wished to consult, and such reports as have been received, contain very little on which an opinion might be based.

3. It is generally admitted that excessive indulgence in the use of ganja does produce insanity, but that by the timely abandoning of the habit, such insanity may be cured.

No valuable medical facts have been obtained.

4. Regarding the effect of ganja in exciting to crime, the magistrates and police officers do not seem to consider that there is evidence to show that crime is committed in consequence of men indulging in the drug.

5. Unless there is an urgent necessity for the Officiating Chief Commissioner's opinion to be submitted at once, he would ask permission to reserve it for a while, so that he may, if possible, obtain further information.

No. 2953—105, dated 19th August 1872.

From *Lindsay Neill*, Esq., Officiating Assistant Secretary to the Chief Commissioner, Central Provinces, to the Secretary to the Government of India, Department of Agriculture, Revenue, and Commerce.

I AM directed by the Chief Commissioner to reply to your letter, No. 344, dated 10th October 1871, inquiring whether the use or abuse of ganja, or of any other preparations from hemp, tends to produce insanity or excites to violent crime to such an extent as to call for any action on the part of Government in the direction of either restricting its use by an enhancement of duty on its consumption, or of totally prohibiting its cultivation.

2. In these provinces there are three preparations from the hemp plant (*cannabis sativa*) in pretty common use, viz. :—

(a) Ganja. (b) Bhang. (c) Charas.

(a) Ganja is prepared from the dried plant which has flowered, from which the resin has not been removed. It is mixed with tobacco, and,

with a little water, is beaten up into a mass. It is then allowed to dry, and when dry is reduced to a powder, and either smoked in a hooka, or eaten.

(b) Bhang is prepared from the dried leaves of the plant, separated from the flowers and stalks by pounding. It is more in use among the wealthier class of the community, and is generally used either in the form of sharbat or mixed up with ghi and sugar in sweetmeats (barfi or majum).

(c) Charas is the resinous exudation of the plant, and, in comparison with the other two preparations, is little used.

3. From the various reports which the Chief Commissioner has received from Officers of this Administration, he finds that there is a considerable difference of opinion regarding the evil effects attendant on a continued indulgence in ganja smoking. In the first place, it may be remarked that the natives generally are of opinion that continued indulgence inevitably leads to permanent insanity. This opinion, however, is not altogether borne out by the data afforded by the lunatic asylum statistics. There are two such asylums in these provinces, one at Nagpur, the other at Jabalpur. Dr. Beatson, civil surgeon, Nagpur, and superintendent of the asylum, reports that out of 317 lunatics received into the asylum since 1864, there were 61 in whom insanity had been occasioned by an immoderate indulgence in ganja. Of these 61, 10 have died, 28 have been discharged cured, and 23 remain uncured. He therefore concludes that excess in ganja smoking does produce an insanity which is transient if the habit is relinquished, but otherwise permanent.

Dr. Rice, the Superintendent of the Asylum at Jabalpur, states that out of 120 lunatics at present confined, 37 indulged in ganja-smoking. From the inquiries he instituted, he ascertained that out of every 10,000 of the population, 1,600 habitually consume ganja or bhang; that the total lunatics at large and under restraint, including congenital idiots, do not exceed the proportion of 5 to every 10,000; in other words, that there is only one lunatic *from all causes* for every 300 ganja consumers. The conclusions he arrives at are these—

(1) That the abuse of ganja, bhang, and charas injures the constitution in the same way as excessive indulgence in any other narcotic drug would.

(2) That it does not necessarily cause insanity, except in those pre disposed to it.

(3) That indulgence in it certainly renders men rough in manner and in speech, quarrelsome, and reckless of consequences.

4. It cannot, however, be alleged with any show of reason that ganja or bhang has, in these provinces, played any part in exciting to violent crime. The records of murder cases from 1863–1871 have been examined, but not in a single instance is temporary or permanent insanity induced by ganja or bhang alleged as the cause of the crime. It has, however, been asserted by several officers that persons who intend to commit any grave offence indulge in ganja to brace themselves up for the dangers they may have to undergo, in the same way as Europeans frequently have recourse to the brandy bottle to nerve themselves to the committal of crime; but in all such cases ganja cannot be said to “excite” to crime. It is only indulged in to stimulate courage or create a temporary excitement and insensibility to fear.

It has also been remarked that so listless and disinclined to all manual labour and physical exertion do habitual consumers of ganja become, and so unable to resist the temptations of the drug, that they frequently commit offences, such as theft, and the like, to obtain the wherewithal to satisfy their desires. As sufficient ganja can be obtained for one anna to satisfy even a habitual consumer for many days, the Chief Commissioner is not disposed to attach very much weight to this assertion. But even if ganja were proved materially to influence the returns of crime, it is necessary to bear in mind that want of moderation and absence of self-restraint in the consumption of any stimulant generally go hand in hand with general want of moral principle.

5. The danger then in this, as in every other form of self-indulgence, is that moderation may grow into excess, and there is no doubt that continued indulgence in this drug tends to impair the nervous system, renders men  
incapable

incapable of mental application, and reduces them to a state of extreme debility and decay. It has been insisted on by several officers that inquiry establishes the fact that the use of ganja is always injurious, never beneficial; and that herein exists a material difference between ganja and spirits. But this view is again combated by not a few who assert, and apparently not without great show of reason, that persons whose employment subjects them to great exertions and fatigues, such as palki bearers, &c., are solely enabled to perform the wonderful feats they not unfrequently do, by being supported and rendered insensible to fatigue by ganja; and the use of ganja leaves in them no after-effect of an injurious kind.

6. It is admitted that the consumption of drugs has of late years very materially increased, and fears have frequently been expressed by district officers that since the introduction of the sadar distillery system and the consequent rise in the price of liquor, many people who formerly drank have taken to drugs as a substitute. Reports received from the district officers of Mandla and Balaghat seem to place this beyond doubt. At the same time natives whose opinions are entitled to weight, declare that the tastes for liquor and for drugs are independent of and not affected one by the other. The drinkers have always been well-defined classes, and include fishermen, boatmen, workers in rice fields, and others with whom drams are a necessity. Drugs, on the other hand, seem to have established a position of their own, and to have extended their influence more among the idle classes (such as the faquirs, bairagees, thieves and prostitutes) of the community than among the workers. There is, however, a possibility, now that drug consumption is gaining ground, that children of the drinking classes may become drug consumers.

7. Taking all these facts into consideration, Mr. Morris is of opinion that it is expedient that some action should be taken by Government to impose restriction on the cultivation, possession, and sale of ganja; and I am now briefly to describe—

(1) The restrictions which at present exist.

(2) The measures which it appears to the Chief Commissioner should be taken.

With the exception of Chhattisgarh, where eight anna and rupee licenses are granted, the cultivation of ganja is not interfered with. The natural consequence is that each villager has in the little plot in front of his hut three or four hemp plants. Increased indulgence in this drug may thus exist amongst the rural population without any corresponding increase in the revenue returns. Practically, then, the ganja consumed in towns alone pays duty. There the sales are in the hands of a monopolist, who purchases annually the drug farm, and the State obtains the maximum duty which competition can induce. Without entering into details regarding the excise on liquor and the sadar distillery system, the fact may be stated that our excise policy within the last few years has altered the relative positions of ganja and liquor to their respective consumers. While the latter has been quadrupled in price, the former remains as before to a large extent free from all duty whatever.

8. The Chief Commissioner thinks that the only effectual system would be to prohibit absolutely the cultivation of ganja without a license, and to restrict the issue of licenses to places where the cultivation and out-turn could be checked by the ordinary revenue establishments. As in these provinces ganja is not cultivated as a fibre, the restrictions now proposed would in no way interfere with hemp as an article of commerce. The imposition of such restrictions would not, so far as the Central Provinces are concerned, be a matter of much difficulty; but to be really effectual and to prevent smuggling and its attendant evils, there must, in the opinion of the Chief Commissioner, be an extension of similar restrictions to all contiguous provinces.



No. 5651—46 G., dated 23rd February 1872.

From *J. Campbell, Esq.*, Secretary to the Chief Commissioner of Mysore, to the Secretary to the Government of India, Department of Agriculture, Revenue and Commerce.

IN reply to your letter No. 346 of the 10th October last, I am directed by the Chief Commissioner to submit, for the information of Government, the following particulars regarding the alleged effects of ganja on persons addicted to its use, and its tendency to create insanity or excite to crime. The necessary inquiries have been instituted through the Officiating Judicial Commissioner and the Deputy Inspector General, Indian Medical Department, Mysore Division and Ceded Districts, and their reports may be said to represent respectively the police and medical views of the question.

2. It is gathered from Mr. Mangles' report that the several officers in the Nagar Division who have been consulted, are unanimous in considering that preparations from hemp are used to a very limited extent in that division, and that cases of insanity produced, or of crime committed, under its influence, are comparatively rare; the superintendent's own experience being that intoxication from this cause is seldom alleged in cases of crime; that its excessive use is confined generally to dissolute Mahommedans, faquirs, and idle vagrants, and its influence on crime hardly perceptible.

3. No instances of insanity, or of crime committed under the influence of ganja, is reported from the Ashtagram Division as having come under the observation of the officers addressed on this subject; but the general impression among them is, that the use of ganja produces very injurious effects, and that some measures of restriction, as regards the manufacture and sale of the drug, are requisite. The Town Magistrate of Mysore adds that crimes relating to the person are increased by the use of ganja, and from cases which have come before him, he finds that, if used in excess, ganja produces a helpless state of imbecility rather than of insanity.

4. In the Nandidroog Division also the opinion prevails that the constant use of ganja affects the mind very prejudicially, and some prohibitory measures are recommended to limit the use of the drug.

5. The Superintendent of Coorg states that ganja possesses valuable medicinal properties, if used in moderation; that it is considered to be an excellent febrifuge by the jungle tribes, and does not produce insanity or aggravate crime.

6. The report furnished by Dr. Ranking shows that out of a total of 250 admissions in the lunatic asylum in Bangalore during the past five years the use of ganja is assigned as the cause of insanity in 82 cases, but 64 persons of the number so affected subsequently recovered their reason, and were discharged.

7. In the Central Jail, the officer in charge has not observed that ganja-smoking has any marked effect in inciting to crime, and that out of seven men then in jail, whose appearance and statement show them to be ganja-smokers, one was incarcerated for robbery, two for theft, two for desertion, one for breach of trust, and one for trespass.

8. While fully believing that the use of ganja frequently incites to temporary insanity, and more generally to a state of frenzy, with a homicidal tendency, Dr. Ranking is unable to state any facts calculated to advance the present inquiry.

9. In conclusion, I am directed to add that there is but little cultivation of the hemp plant in Mysore and Coorg, and that the use in these provinces of the intoxicating drugs prepared from it does not appear to be of a character to call for any special measures of restriction; but Colonel Mead considers that the sale of these drugs should not be permitted, except by vendors specially licensed for the purpose, and that the highest possible excise duty should be imposed on their manufacture, so as to limit their use as much as may be practicable, without encouraging their illicit preparation.

No. 502, dated 10th April 1872.

From *Lepel Griffin*, Esq., Officiating Secretary to the Government of the Punjab, to the Secretary to the Government of India, Department of Agriculture, Revenue and Commerce.

I HAVE the honour, by desire of the Lieutenant-Governor, to reply to your letter, No. 342, dated 10th October last, in which it was requested that a complete and careful inquiry should be made with the view of obtaining reliable information as to the effects of the use or abuse of the several preparations of hemp.

2. The inquiries made have been very general, but the reports received are most contradictory, the civil and police officers differing greatly in opinion as to the influence of these preparations in exciting to crime; while the medical officers disagree as to their effect in inducing mania or mental derangement more or less violent. But though these reports fail to convey any unanimous conclusion as to the effect of excessive indulgence in these drugs, the consideration of the questions referred for opinion may be confined to that of the expediency or practicability of imposing restrictions by legislative enactment on the cultivation, sale, or use of these preparations, on which the Lieutenant Governor's views have been asked, as it is assumed that it is not intended to move the Legislature to take action in the matter unless it can be distinctly proved that their use or abuse excite to violent crime. Such proof is certainly not afforded by the papers collected by this Government. If, therefore, these preparations have no effect upon *crime*, and only injure the persons who use them, it is difficult to see in what manner the law can interfere to restrict their use in a country where opium is a monopoly of the Government, and the effects of which are perhaps as injurious when taken in excess as those of hemp.

3. The effects of the latter, in its different preparations, is fully discussed by Dr. Penny, the Superintendent of the Delhi Lunatic Asylum, in his report, of which copy is forwarded herewith. This report shows beyond all doubt that, though harmless when taken in small quantities, the abuse of hemp may, and often does, produce mental derangement, and that a considerable percentage of cases in the Delhi Lunatic Asylum have their origin in the use of this drug. The conflicting statements of the doctors found in the papers submitted to this Government are not of much importance, compared with the practical experience of the Superintendent of the Delhi Lunatic Asylum.

4. With regard to the question of hemp-exciting to violent crime, the experience of the Inspector-General of Police, reflecting that of all the officers of his department, is the most extensive. Copy of his reply is forwarded, and also copy of the report of the Superintendent of the Lahore Lunatic Asylum, from which it will be seen that a considerable proportion of the lunatics confined for violent crimes have been addicted to the use of hemp, and there is no doubt from the statement of the Superintendent of the Delhi Asylum, and others, that the use of hemp, acting upon excitable dispositions, predisposes, when taken in large quantities, to violence. But it seems to be also clear from the great concurrence of doctors, and especially from the recorded opinion of the Inspector-General of Police, that the amount of crime, violent or otherwise, which can be traced to the use of hemp, is exceedingly small; so small as to make it altogether impolitic and unnecessary to attempt to restrict the sale or preparation by any legislative measures. In the views of the Inspector General of Police His Honour entirely agrees. If people are prohibited the use of hemp and opium, they will in all probability take to some other stimulant, such as alcohol, the amount of violent crime resulting from the abuse of which, as English statistics unmistakeably prove, is more than that of all stimulants used in India put together.

Dated 10 February 1872.

From *J. C. Penny*, Esq., M.D., Civil Surgeon, Delhi, to the Officiating Secretary to the Government of the Punjab.

IN reply to your takid, No. 17, dated 3rd February 1872, regarding the report called for in October 1871, on the abuse of ganja and other preparations of hemp, I regret the delay that has occurred. We have had an outbreak of cholera, a camp-of-exercise, and at the beginning of the year there is an accumulation of annual returns and reports, which has rendered it impossible to take up a broad subject in a short time.

We have abundant evidence of the use and abuse of *cannabis*, or Indian hemp, in the large city of Delhi, where there are two lakhs of people, and especially with a Hindu population in excess of Muhammadan. Both the rich and the poor among Hindus indulge in this narcotic, whereas only the lower class of Muhammadans partake of it. The habitual indulgers are to be found in saises, dhobis, faquirs, labourers, kahars, and halalkhors. They may be found in groups of 20 and 30 from three to five in the afternoon in the Kerdun Shuraf, Panch Kua, Eed Ghar, or on the banks of the Jumna, clubbing together for a smoke at from a dumrie to a pic or two a head. The pipe is passed round until they become merry or angry, and too often quite intoxicated.

Brahmins, mahajuns, and bunyas generally smoke charas at their own houses every day in the afternoon.

I understand that there are about fourteen shops in the city of Delhi at which you can purchase *cannabis* in various forms.

*Bhang* is a very cheap and common form of Indian hemp, which is not smoked, but drunk, and is prepared in the following manner: The leaves and stalks of the *Cannabis Sativa*, which is a jungle or low shrub, growing everywhere in India, especially in the lower ranges of the Himalayas, are ground very fine by means of either rolling pin and stone slab, or of a pestle and mortar, the pestle having a long handle. Water is added little by little until a fine smooth green liquid paste is obtained, which is then strained through a cloth. From half drachm to two drachms are mixed with milk and sugar and then swallowed. Very poor people who cannot afford milk or sugar drink it neat, with merely the addition of a little black pepper. One masha is said to be a harmless quantity, and six mashas will produce intoxication.

The general effect of this form of hemp is to produce quiet, pleasant delirium and stupor rather than excitement, which the next form of Indian hemp is apt to create.

*Charas* is the dried, sticky, resinous exudation from all parts of the *Cannabis Sativa*; even from the pith inside the stalk. The best kind come from Samarcund, Bokhara, and Cabul. From the Ladakh hills it is greenish black in colour, resembles the extract of henbane when moist, and seammony resin when dry and hard. It is bitter in taste, and is smoked with or without tobacco; half a drachm affording a cheerful smoke for two or three men, and costing about two or three pie. It is smoked in a chillum or hukah, on red-hot charcoal, after having been made into a pill or bolus. *Upla* or cow-dung fire is very much preferred. The charas having been placed on the red hot *upla* or charcoal, and the pipe put into the mouth, a strong inhalation is made by which a blaze is created in the chillum; then by a prolonged expiration a clever smoker will exhale an immense column of smoke. Even one whiff will sometimes make the eyes red, and stimulate the nerves to an extent almost inconceivable. The chillum is handed rapidly round from one person to another; any delay spoiling the charming effect. In cold weather, in the rains, or at marriage festivals, resort is made to this artificial stimulant.

Ganjar or ganja although a different form from the last, is smoked in the same way. It is the dried flower-head of *Cannabis Sativa*, but it is not much in use in the Delhi district. Great quantities are consumed in Calcutta and Lucknow, and thereabouts. It is an equally pernicious narcotic; it is rubbed or finely mulled by the hand, and it is said you can detect the old ganja-smoker by a hard corn-like thickening of the hand. It is also smoked in a chillum in the same way as charas by a prolonged inspiration and slow expiration.

The

The last preparation of *cannabis* is *majum*, which is a dirty green sweetmeat in the form of toffee, sold at the rate of an anna per ounce. It is made with the ground leaves of the plant mixed with milk, butter, sugar, and atta, and then baked. About one drachm is eaten at a time. This is the preparation often used by thugs and professional thieves for purposes of poisoning.

Each and all of these forms of Indian hemp act on the nervous system, exercising a peculiar influence over the brain and spinal chord, and their nerves. They also paralyse the sympathetic nervous system, as shown in the arrest of the secretion of the salivary glands.

Their action is chiefly on the mental faculties, and, if long continued, they may produce chronic disorder of the mind. The first effect is that of a stimulant, exalting or exciting the mind; for we find an indescribable sense of happiness; a tendency to laughter. Sometimes the charas-smoker will feel as if he were rising through the air and descending again, or he has an irresistible propensity to dance or jump. Both after drinking *bhāng* or smoking charas, there is a dry burning feeling of the throat. Sometimes there is oppression of breathing; catalepsy is said to be an effect.

There is no doubt of the appetizing influence all forms of *cannabis* have, and if milk, ghee, and a great deal of nourishment be taken, much of the injurious action is prevented.

After the stage of excitement the mind becomes confused, attention is arrested, the man becomes stupid, and at length arrives at the stage of depression.

Old *bhāng*-drinkers, charas and ganja-smokers and *majum*-eaters are, as a rule, emaciated. They lose vital energy, become impotent, forgetful, weak-minded, and melancholy. Others again, especially charas-smokers, are irascible and occasionally violent or abusive.

Again charas-smokers are often asthmatic. I can remember several where there was emphysema of both lungs; where, like broken-winded horses, they had ruptured the fine air cells of the lungs from long-continued and oft-repeated inspiration and expiration. Hæmoptysis is not uncommon amongst them.

There is a state of brain produced by over-indulgence in *bhāng* or charas, which corresponds to *delirium tremens*; sudden suspension of its use causing a state of most violent excitement. The patient talks incessantly; pelts those about him with bricks or stones; bites and tears his clothes; and it would be dangerous to approach him. There is great thirst; craving for food; the skin is hot, but no fever; decidedly sleepless; for he bawls and shouts all night. He may die from exhaustion of the brain, or stoppage of the heart's action from paralysis of the sympathetic, or he may gradually recover.

*Insanity*, or permanent disorder of the mind, is a result of the evil habit of over-indulgence in this narcotic, I think more frequently in those who do not live well. On a reference to the Annual Report of the Lunatic Asylum in Bengal for 1871—Dullunda, Dacca, Patna, Moydapore—I find that *cannabis* constitutes 31 per cent. of the whole; 78 of the known causes of insanity. In previous years the per-centage has been even as high as 50 per cent. in some of these asylums. During the past five years, in my small lunatic asylum in Delhi, I have had more than 50 genuine well-marked cases of mental derangement from the excessive use of Indian hemp.

The following table shows the percentages of total treated in the Delhi Lunatic Asylum:—

In 1867	-	-	-	-	-	11·92 per cent.
„ 1868	-	-	-	-	-	16·61 „
„ 1869	-	-	-	-	-	17·68 „
„ 1870	-	-	-	-	-	20·60 „
„ 1871	-	-	-	-	-	17·14 „

These figures do not represent the whole of the cases of insanity caused by *cannabis*, because there are so many admissions where the cause is not accurately known, and the history a mere blank; but they show the fact that disorder of the mind often results from a most pernicious habit.

The most common form of insanity from Indian hemp is dementia, with or without melancholia, where the patient is totally indifferent to persons and things, and to what is passing around him. He seems to hold no intercourse

with the world, has a stupid state, is very quiet, sleeps well, and has a voracious appetite. There are three or four of these cases now in the asylum.

A less frequent form from the incautious use of hemp shows itself in excitement and paroxysms of violence, with intervals of quiet. They talk loudly, are authoritative and commanding, easily made angry; and this state of excitement may last for a day or two, when the patient becomes more tractable, but he is never safe.

*Durya Shah*, a faquir, now in the asylum, is seldom out of close confinement, his being a well-marked case of a dangerous lunatic from bhang.

*Kurreen Buksh* has been in the Lahore Lunatic Asylum, and is now in the Delhi Asylum. He was a herdsman, indulged too freely in bhang and charas, and is now a confirmed lunatic.

Good feeding, great kindness, strict cleanliness, indulgence of every harmless kind, a little tobacco, and carefully watching all the functions of body, contribute towards the relief of these most unhappy sufferers.

No. 26, dated 21 February 1872.

Memo. from Lieut.-Colonel *G. Hutchinson*, C.S.I., Inspector-General of Police, Punjab, to the Officiating Secretary to the Government of the Punjab.

In reply to his Circular No. 62, of the 24th October last, regarding the abuse of ganja and other preparations from the hemp plant, forwards, enclosed, a *résumé* compiled from the reports of District Superintendents of Police on the subject.

2. Observes that "dhatara" is more generally used in poisoning for plunder than any other drug, and that Inspector-General cannot as yet show that sufficient harm arises from the drugs under report to render any special legislation necessary.

#### MEMORANDUM.

The information called for by Government of India regarding the injurious effects of ganja and bhang on those who are addicted to its use is now supplied as far as officers are able to state.

The main points of enquiry are—

I.—Does the use of ganja produce insanity or other dangerous effects?

II.—Do ganja and bhang excite to violent crime?

III.—Are these used by criminals in furtherance of their designs?

IV.—Is legislation necessary to restrict the use of these preparations of the hemp plant by enhancement of duty on consumption or on cultivation of the plant?

In regard to the first point,—use of ganja resulting in insanity,—officers have *Insanity.* no known cases to report, but state they have heard of such.

*Amritsar* has heard of two men having been temporarily insane for two years from "charas" smoking.

*Gurdaspur* states that it causes imbecility, and not unfrequently confirmed lunacy.

*Hushiarpur* says bhang is prepared as an infusion and flavored with different ingredients according to taste, and, if taken in large quantities, produces aberration. If its use in strong doses is continued it causes insanity. He reports that in March 1870 a man who was much addicted to its use was sent to the lunatic asylum. In October 1870 a "charas" smoker was also sent there. In December last there was a similar case of insanity from charas.

*Multan* refers to the works of Dr. N. Chevers (Medical Jurisprudence, pages 219, 777 *et seq.*) and Dr. Honigberger's Thirty-five years in the East, pages 154-7.

He

He says bhang drinking has been known to result in insanity, but can give no recorded case.

*Kangra* says the habitual use of ganja produces idiotcy, and District Superintendent, Jhelum, observes that the memory becomes weakened.

Inciting to crime. 2. On the second point officers report as follows:—

*Amritsar* instances two cases in which assaults were committed by persons who were said to be at the time under influence of the drug "charas"; in one case a lady was assaulted in 1867, in the other a constable cut down in 1865—a Tehsil chaprassie.

*Hushiarpur* says that in March 1864 the Nehung Sikh who killed the Reverend Mr. Janviers (missionary) was a known bhang drinker.

In July of the same year three Nehungs entered the Gurdwara at Anundpur, snatched up some swords, and severely wounded the Mahunt. They were under the influence of bhang at the time. Five other cases of violent assault and wounding are reported from this district by bhang drinkers and "charas" and "ganja" smokers.

In August 1871 a man attacked and killed a boy who was herding cattle. He was a faquir, and addicted to the use of both bhang and charas.

Hemp preparations used by criminals. 3. Use of hemp preparations by criminals in furtherance of their designs—

*Ambala* says bhang is used, but gives no instance.

*Delhi* alludes to one case in which bhang was employed to cause stupor.

*Gurdaspur* says that hemp preparations are rarely employed by themselves, but are often used as media for administering dhatura.

4. Restriction on use of the drugs and cultivation of the hemp plant—

*Gurdaspur* suggests enhanced tax on ganja and charas, but would not recommend any interference with the use of bhang.

*Hushiarpur* agrees with this.

*Multan* considers that the number of vendors of the drugs should be reduced, also the quantities specified in Section 19 of Act X. of 1871, and the importation of the *Cannabis Indica Cashmireana* be entirely prohibited.

*Jhang* agrees as to restriction.

At page 216 of Stewart's Punjab Plants, it is stated that "a cold infusion of the tops (hemp plant) is generally used, and is in great favor with Sikhs, who are debarred from tobacco, and so make up by the use of this, opium and spirits."

The District Superintendent, Delhi, reports that about 10 per cent. of the police force use bhang in moderation as a stimulant during hot weather; while about 5 per cent. are habitual drinkers of it, and mostly Punjabis and Sikhs.

Dr. O'Shaughnessy appears to have made some experiments with "charas" or hemp resin; for the work is alluded to at page 282 of Voigt's Hortus, where it is also observed that charas is useful as a remedy against traumatic tetanus.

In Elliot's Supplemental Glossary, North-Western Provinces, page 81, it is stated that bhang is made from the female hemp plant (*Cannabis Sativa*), the male plant producing the exudation called ganja, and that the best bhang of the North-Western Provinces comes from Baraich and its neighbourhood, and from Dundwari, in Kanouj; while the best ganja is from Bengal.

At page 217 charas is mentioned. The Bokhara charas is most esteemed, and fetches double the price of the country produce.

Bhadurgarh, in Delhi District, is the grand depôt for the charas of the North-Western Provinces.

Ganja is referred to at page 373. That from Bengal is most valued. It is prepared from the dried plant, from the flowers of which the resin has not been taken off. It is said that each plant will yield from 2 to 2½ seers.

Chever's Medical Jurisprudence contains a great deal of information at pages 219, 777, &c.

No. 404, dated 21 December 1871.

From *J. B. Scriven*, Esq., Superintendent, Lunatic Asylum, Lahore, to the Deputy Commissioner, Lahore.

In reply to your letter, No. 1920, dated 30th October 1871, requesting a report on the influence of the various preparations of Indian hemp in producing insanity and predisposing to violence and crime, I have the honour to inform you that I have made inquiries on this subject with reference to the 248 lunatics who were under my care in the lunatic asylum on the 27th November last. My sources of information have necessarily been imperfect, being, in fact, simply the rolls of the insane people furnished on admission, or the statements of the lunatics themselves. It is probable that all the persons reported as addicted to these drugs are correctly so reported, though I doubt not there are many other inmates of the asylum who have been in the habit of using them, but are unwilling to confess it.

2. It appears from the inquiry that out of 248 lunatics, 89 are in the habit of using some preparation of hemp, men, 82; women, 7; total, 89. Of these, 17 are criminals, 14 having committed violent crimes. The whole number of criminals confined for violent crimes is 28; hence half, or 50 per cent., probably have been predisposed to commit these crimes by the use of this intoxicating drug.

3. As to the non-criminals, 72 men are reported as using hemp; but only 17 of these are violent. However, any of these 17 violent men, if let loose, might commit violent crimes; so that they may, for our present purpose, be bracketted together with the violent criminals that indulge in hemp; hence it appears that of the 89 persons said to be addicted to hemp, 31 are dangerous characters, or 34·83 per cent.

4. The number of women about whom information has been obtained is too small for any special deductions to be drawn regarding the use of hemp among the female sex.

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No. 92-A., dated 20th April 1872.

From *C. A. Elliott*, Esq., Secretary to Government, North Western Provinces, to the Secretary to the Government of India, Department of Agriculture, Revenue and Commerce.

I AM directed to acknowledge the receipt of your letter, No. 341, dated 10th October 1871, requesting that investigations might be made as to the extent to which the abuse of the various preparations of hemp is known to produce insanity and to excite to violent crime, the ultimate object of the investigation being, if necessary, to impose restrictions on the use of ganja and other deleterious preparations.

2. In reply, I am to state that the reports received from the officers consulted disclose a wide variety of opinion. Generally the prevalent impression may be said to be that ganja and charas are exciting in their effects, as opposed to bhang, which is described as being lethargic. It is feared, however, that there is but a slender ground-work of facts for the opinion. Even the returns of the lunatic asylums are based on hearsay reports, and have no scientific value.

4. It is, in his Honour's opinion, impossible that if the results were really as bad as is sometimes supposed, either as inciting to crime or deteriorating the human system, such a wide inquiry would not have resulted in a more general and decided *consensus* of opinion, and in the production of numerous facts bearing out that opinion.

4. Under



4. Under these circumstances His Honour the Lieutenant-Governor cannot recommend the adoption of any special measure to limit or stop consumption or the production of the plant. It grows freely in the country lying along the foot of the Himalayas, and it can be grown in every moist and low-lying tract. Such being the case, to prevent its production would, be His Honour apprehends, almost impossible.

5. With respect to the advisability of enhancing the duty at present imposed, I am to state that the system in force in these Provinces, which is to farm the lease for a district or part of a district to the highest bidder, precludes the possibility of such a course, for the adoption of which no means exist unless the sale is made a monopoly, and treated by Government in a similar way to that of opium.

6. I am to add that the record of the investigation will, if His Excellency so desires, be submitted for the perusal of the Supreme Government.

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No. 6, dated 20th April 1872.

From Captain *G. H. Trevor*, 2nd Assistant Resident, Hyderabad, to the Secretary to the Government of India, Department of Agriculture, Revenue and Commerce.

I HAVE the honour, under instructions from the Resident, to acknowledge the receipt of your letter, No. 347, of the 10th October last, requesting information as to the extent to which the use of the several preparations of hemp produces insanity or excites to violent crime, and also whether any action is considered advisable with a view to restricting their use by enhancement of the duty on consumption.

2. Copy of the communications received from the several officers marginally

1. From Commissioner, East Berar, No. 82, dated 8th January, with enclosures.

2. From Commissioner, West Berar, No. 76, dated 11th January 1872, and enclosures.

3. Inspector General of Police, Hyderabad Assigned Districts, No. 226-A., dated 30th December 1871, with enclosures.

4. From Sanitary Commissioner, Hyderabad Assigned Districts, No. 2357, dated 6th November 1871.

noted, whose opinions were invited on this subject, is enclosed. It would seem that the use of ganja and bhang in Berar is not very extensive, and is restricted, in a great measure, to the lower class of the population. The drug in some shape or other is found to be resorted to either before or after the commission of a crime to strengthen the nervous system. Its habitual use, however, undermines and destroys the constitution, producing premature imbecility, but is not believed to be con-

ducive specially to the commission of violent crime.

3. Mr. Saunders believes that the abuse of this drug is not so great in this part of India as to necessitate the introduction of any special legislative measures.

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No. 62, dated 8th January 1872.

From the Commissioner, East Berar, to the First Assistant Resident, Hyderabad.

I HAVE the honour, with reference to your letter, No. 1061, dated 31st October last, to forward herewith, for the Resident's perusal, the reports of district officers as to the extent to which the use of "ganja" or "bhang" produces insanity, or excites to the commission of violent crime.

2. Judging from my own observation I do not think that the people of Berar are much addicted to the use of these two preparations of opium and hemp. The preparation most commonly consumed here is called muddat, which is a



mixture of opium and the leaves of the common *barbel*; but there is nothing whatever to lead me to suppose that the use of this drug incites to the commission of violent crime. On the contrary, our records show that violent crime is rare in this province, and so long as this is the case, I do not think that we need take measures to limit the use of muddat.

3. It is very well known that a man in Upper India who resolves to commit a violent crime almost invariably partakes largely of bhang just before its commission. He does this with a deliberate intention to deprive himself for the time of reason and of the powers of reflection; in short, to reduce himself to the condition of a savage wild beast, so that he may have no compunction when his victim is before him; but I cannot call to mind more than one or two cases which I have tried in this part of India in which the accused had thus prepared himself for the commission of the crime, and if my memory serves me rightly, in both cases the offender was a foreigner, i.e., an inhabitant of Upper India.

4. Whether the use of ganja or bhang or even of "muddat" induces insanity is a matter on which I am scarcely competent to give an opinion which would be of any value to the Government of India, but I can hardly suppose that these drugs can be used with absolute impunity. The brain must, I think, be more or less affected, and I incline to think that while the use of bhang (a preparation of *hemp*) excites the brain, and thus may lead to madness, the use of muddat (a mild preparation of *opium*) soothes the brain, and deadens the faculties, and thus its abuse may lead to stupor and eventually to idiocy.

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No. 441, dated 16th November 1871.

From the Deputy Commissioner, Oomraotee District, to the Commissioner,  
East Berar Division.

WITH reference to your memorandum, No. 2484, of the 4th instant, I have the honour to inform you that the people of this district are not much given to bhang and ganja. No instances of producing insanity or exciting violent crimes by the excessive use of these drugs ever came under my observation.

2. This subject has, I find, been ably discussed by Norman Chevers, M.D., in his *Manual of Medical Jurisprudence for India*, at pages 219 to 226, 777 to 780, 786, 799, and 809 of the edition for the year 1870. In the pages quoted, you will find a number of cases reported, and they contain several medical opinions.

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No. 534, dated 22nd December 1871.

From Captain *K. J. L. McKenzie*, Officiating Deputy Commissioner, Ellichpur District, to the Commissioner, East Berar.

I HAVE to acknowledge your reminder, No. 2819, of 1871, calling without further delay for report on the question submitted with your No. 2485 of 1871, viz., as to the extent to which the use of ganja or bhang produces insanity or excites to violent crime, the question to be considered in all its bearings with reference to the policy of Government as to excise duty. The subject had not been forgotten; subsidiary orders went to all magistrates under me, and I directed a search into the criminal records for cases throwing light on it. Captains Alexander and Loughton and Mr. Dinshawjee have as yet alone reported, and they tell me that nothing has come to their knowledge, showing directly or indirectly the effects of opium or its compounds as an exciting agent. The other magistrates have not yet reported, but, under pressure of your reminder, I will not wait for their answers, the more especially as they are

are not likely to be different from those already received. On the question of insanity resulting from the abusive use of opium and its compounds, it seems to me that the magistracy as a body can hardly be expected to throw much light. Asylums and large hospitals where such cases are treated would be the best sources of information. As to the second point, the extent to which opium and its compounds has played a part as an exciting agency, I have observed that in all violent crime committed under motives of religious fanaticism, in revenge for wounded honour or out of jealousy, the agent has usually, before perpetration, brought himself up to action pitch by taking largely of bhang. In all other cases the abusive use of opium or its compounds is not usually apparent. The respectable portion of the Muhammadan community, I am aware, greatly deplore the love of "muddat," the use of which they assert to be largely on the increase, with very injurious consequences, amongst their women. But to say how far the use of this deleterious compound, or its kindred ones, has really spread, what damage, physically, intellectually, or morally, has resulted, and what action, if any, in the way of repression, is necessary on the part of Government, is quite beyond me to report upon with any fidelity. All data, either of the past or present, are entirely wanting. The question, with all the results that it leads to, is a most difficult and large one; it needs careful and prolonged inquiry before the facts elicited can be relied upon for the deduction of sound argument. Research in this direction among the populations of Europe by eminent men, who give it their time and thought, has hardly resulted in anything completely satisfactory; and if this be the outcome, where means and opportunities of investigation are so much more complete than they are in India, our Government can hardly be surprised if we fail in giving any satisfactory reply to the questions propounded to us.

2. In a book of reputation by Dr. Charles Elam, entitled "A Physician's Problems," there are some suggestive chapters on agencies\* that, through

\* Spirituous liquors, opium, ganja, bhang, muddat, and all such compounds.

abusive use, act on the nervous system, and tend to lower, both in body and mind, the tone of individuals indulging in them, and it is there further shown that the taste for indulgence on the part of parents is, in a large percentage of cases, transmitted to their offspring, with a strength that, theoretically considered, may not be irresistible, while practically it is so, blunting, in many cases abolishing, all moral sentiment, and impelling the unfortunates thus mentally diseased to the commission of crimes of all kind. In the various medical works, and returns, too, that one usually comes across, it is a ground of complaint that where increased indulgence in any one of the agencies above referred to becomes, for any reason, possible, there follows sooner or later an immediate increase in insanity. I have read, as an instance in point, that in Norway in 1825 the spirit duty was removed. Hence, subsequent to that date, the people there indulged more largely and freely than they formerly used to. The consequence is recorded that on the returns between that year and 1835, the increase of insanity, not to be accounted for in any other way, amounted to above 50 per cent. on the previous proportion, but the increase of congenital idiocy was 150 per cent., and I believe it is a well-established fact, taken from long observation in the asylums of Europe, that the larger proportion of the idiots and insane are the children of intemperate parents.

3. Between the first forms of mental disease impelling to crime, either inherited or personally induced, resulting from intemperate indulgence in one or other of the enervating agencies that we are speaking of, and declared and unmistakable insanity (when the State steps in to deprive the individual of liberty), there are varying degrees of intensity, which the law does not recognise, and which the magistracy, in the course of their investigations, for obvious reasons, cannot discover. Yet if these diseases in Europe are found by those competent to detect them very largely to affect the great majority of the criminal classes, and so may be said to be in a great measure the cause of crime, investigations in India would no doubt disclose that similar causes are having like effects, especially as climate and opportunity combine to induce indulgence. But till we have some certain data to go upon, I cannot see how officers can with any assurance advise the Government to repressive action, since they cannot tell where, how, or why, the line of indulgence should be drawn.

4. I have a belief that the opportunities of indulgence given under our rule are too great, and that they might with advantage be curtailed; but I can give no satisfactory reason for holding this belief beyond this, that likely to be well informed natives tell me that intemperance of all sorts is greater in these days than formerly, and I know that the consequences of intemperance are very disastrous. But how effectually to repress this tendency to intemperance is a question that, with the information at present before me, I cannot really advise upon. Reform in these matters, to be thoroughly effectual, should commence at home, and be independent of Government action, and can only come about from extended knowledge. To wait for this millennium, however, would be somewhat Utopian in idea. And yet if people have strong cravings, and are determined to indulge those cravings, the direct repressive action of Government would go but a small way in effecting good, for as soon as one source of supply is closed, or nearly so, the ingenuity of man usually at once devises another, the consequences of which, as a rule, are more hurtful. The history of indulgence and their attempted repressions points the moral that interference of Government requires to be most carefully considered. For we know that good intentions in repressing a known evil have frequently resulted, as I have said above, in calling into existence a greater.

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No. 2094-64, dated 26 December 1871.

From Major *H. Szczepanski*, B.S.C., Deputy Commissioner, Woon District, to the Commissioner, East Berar.

WITH reference to your No. 2820 of 1871, I have the honour to inform you that the report therein called for has been delayed by the tehsildars of Woon and Yeotmall, who failed to submit in proper time certain information called for from them

2. From official records, it appears that in this district there are 978 seers of ganja and bhang consumed in a year by 876 persons; but these figures do not truly tell the consumption, because a good deal of hemp is grown by consumers, of which we have not cognizance.

3. From inquiries made, it appears that ganja takes effect immediately, that the person taking it becomes insensible, and remains so for about three hours, and that he feels a sensation of heat.

4. Bhang does not take effect till about three hours after it is taken, the person remains under its influence about four or five hours, during which he is not wholly insensible, and feels a sensation of cold.

5. The general opinion is, "that the use of ganja and its preparations induce excitement, its protracted use inordinate excitement, and its abuse mental derangement."

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No. 76, dated 11 January 1872.

From Lieutenant-Colonel *James Stubbs*, Officiating Commissioner, West Berar, to the First Assistant Resident, Hyderabad.

I HAVE now the honour to reply to your letter, No. 1062, dated 31st October last, requesting information as to the extent to which the use of ganja or bhang produces insanity or excites to violent crime, also as to whether any action is considered advisable with a view to restricting the use of ganja and other preparations of hemp by enhancement of the duty on consumption, and limiting or entirely prohibiting the cultivation of the plant.

2. I must premise by stating that a copy of your letter, and of the enclosure which accompanied it, was forwarded to all Deputy Commissioners of this division

division for report after consultation with their native assistants or tehsildars, or the native gentlemen of their districts likely to be able to afford them any information.

3. I now annex copies of the replies received, which are singularly unanimous in opinion, that the preparations of hemp referred to are comparatively harmless, do not produce permanent insanity, do not incite to violent crime, and that their prohibition is neither necessary nor advisable.

4. The Assistant Commissioner, Bassim, states the effect is the reverse of exciting to violent crime or desperate acts, thus differing from the effects of ardent spirits or the various preparations of opium. When a person first indulges in the use of ganja and bhang, he becomes foolish and maddened for about three days; persons habitually given to their use are generally in a state of stupid depression.

5. The Deputy Commissioner, Buldana, cannot discover that any criminal has been induced to commit crime by taking bhang or ganja, and he is not of opinion that its use produces insanity. His Assistant, Mr. Taj-ud-din Hussain, whose opinion ought to be valuable, says these drugs are taken by the labouring poor as a means to lighten their daily work, and as a few plants of ganja can be grown in the enclosure of each hut, he doubts the possibility of restricting the use of the drug, in addition to which he thinks it harmless and unobjectionable.

6. The Deputy Commissioner, Akola, believes the use of ganja and bhang has the effect of undermining and destroying the constitution. It, he states, is used by the lowest classes, and is not conducive to crime; but criminals are in the habit of nerving themselves with this stimulant when they have determined to commit crime.

7. Nevertheless, it is an incontestible fact that all violent crime is, according to European ideas, at all events, preceded by smoking ganja. In a double murder recently committed in the Buldana district, a confessing prisoner states that, prior to the commission of the deed, they assembled under a tree, and sat down to smoke ganja, and Mr. Collins, the Officiating Superintendent of Police of the Buldana District, informed me that in all his experience he had never known a case of violent crime that was not preceded by smoking ganja; but it may very possibly be, as Captain Huddleston observes, that the ganja is smoked after the crime is determined on to bring the courage up to a certain point, in the same way that a stimulant of some kind is resorted to by criminals of all countries prior to the commission of offences.

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No. 48, dated 4th January 1872.

From Captain *R. Huddleston*, Deputy Commissioner, Akola District, to the Commissioner, West Berar Division.

WITH reference to your office No. 4456 of the — ultimo regarding the use of ganja.

2. I have the honour to forward a copy of a report from the Civil Surgeon to whom I forwarded the correspondence on the subject.

3. Habitual ganja-smokers are no doubt indolent in habit, with constitutions more or less vitiated, sometimes almost imbecile, and of sickly appearance, with a peculiar expression in the eye, which renders them easily recognised. If, then, our criminals were generally of this class, or if violent crime emanated particularly from them, the fact would not remain hid.

4. The following are some of the effects:—

I.—Lips of the smoker get darker.

II.—Eyes show red lines in them.

III.—Temperament becomes silly and talkative.

IV.—Asthmatic and peevish.

V.—Constitution weak and sleepy.

VI.—Appearance light-coloured.

There is a common native idea that these smokers are exempt from the evils of miasma and impure water.

5. But I can hardly remember a case of any gravity where the crime could be traced to the effects of passion induced by ganja, though I can call to mind cases where the criminal having fully made up his mind to do the act, nerves himself with these preparations, lest his courage should fail him at the last moment. There is, however, a broad distinction between these two classes of cases, which is sometimes ignored, for it is clear that if ganja be unattainable in this stage of the affair, something else could easily be found to do its duty, and that ganja was by no means the cause of such offence.

6. Ganja is frequently mixed with poppy capsules and other plants, which, under the name of charas, is very inebriating. Bhang, on the other hand, is not so powerful. It is used when mixed up with certain condiments and sugar, as a "sherbat" or drink; or if mixed with ghee, it is eaten in the form of small cakes known as "majum."

7. To be more minute, ganja and bhang are the products of the same plant. It is sown in the month of July, and comes to full bearing in December and January. The leaves of the plant are called bhang, and the flowers ganja; the seeds are useless, but they are found sold mixed with the above two.

*Ganja*.—This is green and whitish in colour when parched; it is used for smoking only in one of the following ways:—

(1.) The general and mildest way of smoking ganja is first to take it on the palm of the left hand, and to mix it with water by rubbing it with the right hand thumb, adding a little less quantity of tobacco, then smoke in "chillum" with or without a pipe "hooka."

(2.) It is sometimes mixed with opium and prepared in the same manner, and then smoked;

(3.) or with the roots of kanere (sweet-scented oleander);

(4.) or with "dhatura" or *stramonium* seeds;

(5.) also with buch nag (aconite or moorkshood); and

(6.) with koochla or *nux vomica*.

*Bhang*.—Is green in colour, and is used by people in various ways:—

(1.) It is pounded and turned into a drink.

(2.) It is dried, powdered, and eaten.

(3.) It is mixed with sugar and water and taken as sherbat, under the belief that it is cooling in the hot weather.

8. Drinking bhang is common among Marwarees and the people residing in Upper India.

The effects, though of the same nature as smoking, are not so sudden, strong, or lasting.

Some drink bhang as tending to excite the sexual passions, and women are said to use it in procuring abortion, but the manner of its exhibition is unknown to me.

*Majum*.—Is prepared of ganja juice and sugar and fried in ghee, and formed into small cakes, which, however, produce much less effect than that of bhang and ganja.

9. It is believed that excess in the use of ganja and bhang is conducive to insanity, which is, however, generally only of a temporary and harmless type. The cases of mental aberration which come before the magistrates are almost invariably those where the disease has been present from birth or childhood, and therefore cannot have come from ganja or bhang.

10. Those

10. Those who indulge in these drugs belong to the lowest portion of the population, both Hindu and Muhammadan, who congregate in our towns. That crime should be more rife among such a class than with agriculturists is to be expected. Those are the great liquor-consumers, and if they cannot obtain exciting compounds in one way they will in another.

11. Therefore I should not condemn these compounds as being directly connected with crime; that is to say, they are no more the cause of offence than is the bazar liquor with which the Banjara is so often primed when he does highway robbery, or the beer and gin guzzled by the British rough before he beats his wife and assaults a policeman. The use of ganja and bhang is to be regretted, because like opium it always gets taken in excess, and it undermines and destroys the constitution. But I do not believe, it conduces to violent crime, nor is the abuse of it so great in this part of India as to necessitate the introduction of any special legislative measures.

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No. 288, dated 23rd December 1871.

From Mr. Apothecary *J. V. Pitts*, Akola District, to the Deputy Commissioner, Akola District.

WITH reference to your endorsement No. 6260, dated 16th ultimo, bearing on the question whether the use of ganja or bhang produces insanity, I have the honour to submit the following report.

2. I have no personal experience on this subject, but it is my belief that if long persisted in, insanity will follow; this, however, is merely hypothesis; I cannot support it with facts within my own knowledge.

3. I am also led to believe that the indulgence of any or of all the various preparations of hemp excites to violent crime, and from what I have learnt from other sources, it seems that violent crime is invariably perpetrated whilst under its influence, and judging from the character of the natives generally, such supposition seems not altogether improbable.

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No. 4146, dated 13th December 1871.

From the Deputy Commissioner, Buldana District, to the Commissioner, West Berar.

I HAVE the honour to acknowledge the receipt of your No. 4457 of the 4th November 1871, with enclosures, on the subject of ganja or bhang.

I beg to enclose translation of a report on this subject from Mr. Iajoodeen Hoosain, whose experience as a magistrate and acquaintance with the habits of the people here and elsewhere in India should make his opinion valuable.

The Tehsildars of Maikur and Mulcapoor do not consider that the use of bhang or ganja produces insanity or induces to violent crimes.

None of these officers ever have observed in their experience that any criminal has been induced to commit crime by taking bhang or ganja, and I cannot record any instance of the kind in my own experience.

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Translation of a Report from Mr. *Iajoodeen Hoosain*, Assistant Commissioner on the Subject of Ganja and Bhang.

There is little manufacture of ganja and bhang in Berar, and especially in the Mulcapoor Taluq, except in some villages such as Doodola, Shelgaum, Duhigaum, and Soolatu, &c. The hemp crop is not cultivated so abundantly as the other crops are; bhang is not at all produced in this part of the country;

country: bhang is abundantly produced and sold in Northern India. In this part of the country, the leaves of the ganja tree are used as a substitute for bhang; ganja in this part of the country is used by gosavees, faquirs, ascetics, mendicants, and labouring classes of people. The cause for which it is used is that it is not costly, and besides a very small quantity has the power of producing its effect on the person using it; but not making him so senseless as to induce him to commit a crime; on the other hand, its users continue to work as long as they are under its influence, and it makes them feel their labour light. It is a means, I should say, of assisting them in gaining their livelihood. The users of ganja suffer in their old age from cough or asthma, and they have a shrivelled and dried-up appearance. The reason of this is that they lose their strength, being bent under the load of years, and in this state they cannot labour, and consequently with difficulty they earn their livelihood. For the users of ganja tonics require to be used to lessen its influence; but as the poor could get no tonics in their old age owing to want of money, as they continued to use it longer to preserve their strength, they suffer from cough, &c. They are not required to spend money for ganja, as they can plant its tree in the enclosure of their house, and it serves them for the whole of the year. If the use of ganja be called a vice, we scarcely meet with such cases in which a person being intoxicated with ganja, has caused a hurt or injured any person. Bhang is used by gosavees, faquirs, Marwaris, sahookars, and others. It is not used always, but only in hot seasons, as a cooling substance. It is prepared with the mixture of milk, sugar, and other spices. Gosavees, &c., call it *Mahadeo's Bootee*, and some people, except Marwaris, offer it first to their gods and then take it as their "persad"—remnants.

These are the kinds of uses of ganja and bhang.

On enquiry with the contractors of opium, ganja, and bhang, I came to know that muddat, a substance made from opium, and now-a-days brought in use, is much more used than ganja and bhang. There seems no good from the use of muddat; but on the other hand, it reduces the health of a young person, and absorbs the whole blood from his body.

In my humble opinion, I see no disadvantages from the use of ganja and bhang; but, on the contrary, I see them in the light of producing some good to their user. I also do not think that the use of ganja or bhang would be altogether restricted, though the duty on them be enhanced, or their produce be very much limited. If their cultivation be restricted, it will be afterwards observed that the persons, who are quite given up to their use, have planted some plants in the enclosures of their houses, and if they be prosecuted on this account, the Criminal Courts will have much work imposed on them. If the duty be enhanced, those that are addicted to the practice will sell anything they have to satisfy their craving.

No. 2335, dated 18th December 1871.

From Captain *C. O. Mayne*, Assistant Commissioner, in Charge Bassim District, to the Commissioner, West Berar.

In reply to your docket No. 4458 of 4th November 1871, I beg to report as follows on the preparations of hemp called ganja and bhang, and their effects on the human frame.

2. It may be interesting if I state the mode of preparation in these parts.

*Ganja*.—The leaves of the plant are picked, and the seeds and stalks separated from them. The leaves are then washed in three or four waters, and the moisture pressed out; equal quantities of tobacco are then mixed with the leaves and small quantities are generally mixed up in the palm of one hand with the thumb of the other; a ball, the size of a walnut, is made and then smoked by the manufacturer in his hooka.

*Bhang*.—The leaves of the plant are picked according to the quantity required; the leaves are then pounded well with a stone and mixed with water.

About



About a handful of leaves to a lota full of water will generally make a man very drunk. This is the ordinary way of drinking it. Men of high caste and epicures mix cocoanut, poppy-seed, milk, plantains, sugar, and various spices according to taste. A mixture is sold by the bunniahs for the purpose called "bhāng masala."

3. As to the effect on the human frame, I am of opinion, after much enquiry, that generally the effect is the reverse of exciting to violent crime or desperate acts, differing from the effects of ardent spirits and the various preparations of opium. When a person first indulges in either of these preparations (for the effects of both are much the same), he becomes foolish and is maddened for about three days. The tongue becomes dried up, and excessive thirst ensues. The feeling is described as being lifted off the earth. Persons habitually given to these preparations are generally in a state of stupid depression and sit with their eyes cast down. The effects, though intoxicating, are very depressing and give rise to nervous fears and sudden frights, people often quivering with fear without any cause. Persons who constantly indulge in the drug have a haggard stupid expression, easily detected, and talk loudly.

4. The persons most given to smoking the drug are faquirs, gosains, and byragees. Some people accustom themselves to smoking the drug three times a day—at sunrise, mid-day, and sunset; others smoke it at all hours.

5. Marwaris are much given to drinking "bhāng." It is supposed to be cooling in the hot weather. The habit of either drinking bhāng or smoking ganja is very difficult to leave off when once commenced.

6. Bhāng is also taken by immoral people as an "aphrodisiac" as tending to excite the sexual passions. Preparations of hemp are also much used by women for the purpose of procuring abortion.

7. There is another method of using the leaves of the plant, that is, mixing it up with jowaree gruel. It is then called *bhāja*.

8. A sweetmeat named *majum*, also manufactured from ganja, produces an intoxicating effect.

9. The preparations of opium, *muddat*, *chandū*, and *koosumba*, are more calculated to produce effects which tend to cause violent crime than ganja and bhāng, the preparations of hemp.

No. 226, dated 30th December 1871.

From Major *A. H. Millett*, Inspector General of Police, Hyderabad Assigned Districts, to the First Assistant Resident, Hyderabad.

ADVERTING to the Second Assistant Resident's reminder No. 2191, dated the 15th instant, I have the honour to forward, for submission to the Resident, the following report relative to the abuse of the several preparations of hemp, which was called for in the Second Assistant Resident's letter No. 1063 of the 31st October 1871.

2. I regret that although on the 9th ultimo I called for the opinions of three officers in district police charge on this question, I have only received one report from the District Superintendent of Police, Woon.

3. A copy of Mr. Cumberlege's report is annexed to this letter.

4. My own observations in this part of India do not warrant my condemning the use or abuse of ganja and bhāng to the same extent as I think I should have been prepared to do in connexion with the natives of the Punjab and Hindustan.

5. I cannot from my own experience say that the use of ganja or bhāng in these parts is a common incentive to crime, nor do I believe that its ordinary use leads to insanity otherwise than temporary.



6. Rahtores and others from Rajputana are certainly addicted to the use of the drugs mentioned, and there is reason to believe that before engaging in any offence requiring much animal courage, persons of those classes prime themselves with charas, bhang, or ganja. So far the drugs mentioned are, I believe, much abused, and, as I know of nothing in their favour (excepting when they are used purely as medicines), and I cannot satisfactorily determine even that point in their favour, I am quite sure that some restriction on the use of the plant would have a salutary effect.

7. The drug, or rather the preparation, which seems to me to demand particularly restrictive measures in Berar, is "muddat" (properly called "Muddhk"), which is greatly used by the Mahomedans and by very many Hindus and low caste persons throughout these districts.

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No. 406, dated 13th November 1871.

From *N. R. Cumberlege*, Esq., Superintendent of Police, Woon District, to the Inspector General of Police, Hyderabad Assigned Districts.

I HAVE the honour to acknowledge receipt of your endorsement No.  $\frac{2590}{1117}$ , dated 7th instant, forwarding copies of certain letters regarding the abuse of the preparation of hemp and its excitement to crime.

2. I have just replied to a similar endorsement received from the Deputy Commissioner of this district.

3. I am not prepared to offer any opinion regarding the extent to which the use of ganja or bhang may tend towards producing insanity or excite to violent crime, because it is the first time I have considered the subject in this light; but I always thought that bhang had rather a soothing effect on the nerves, and was less calculated than spirituous liquors to excite the consumer to the commission of crime. A temporary stupor was, I thought, the result of the abuse of this preparation, and never having studied the subject as it is here put, I am certainly not in a position to offer any remarks whatever.

4. Ganja, bhang, muddat are abused very much in Berar, and the abuse of any stupifying drug or preparation would necessarily affect the consumer perniciously, the brain would certainly suffer in time, and the abuser of these preparations very soon discovers unmistakable signs known to us all. For instance, the bhang and muddat abuser gradually seems to waste away, he becomes so thin that the very sight of some of these men is exceedingly painful, whilst any attempt at suddenly restricting his allowance causes a determined diarrhoea. The ganja-smoker, too, is a deplorable sight before he obtains his morning pipe, troubled with nausea and a headache, and showing all the signs of extreme general debility. It would certainly be easy to understand such, and one could in time so poison his brain as to show a certain softening of his reasoning faculties, and the step onwards is not too wide from this to insanity, to make the idea that such may result from the abuse of ganja anything but a very reasonable deduction. Anyway, as I have not taken up this subject as it is now presented, anything I might offer in the way of remarks could only be surmises which have not been verified in any way by close enquiry into the subject itself.

6. That anything like an enhancement of duty on all drugs, whether preparations of hemp or opium, would be beneficial to police working, I am hardly called on to affirm, because this would seem the only deduction tenable and too clear a fact to call for any disputation on this point.

6. I regret I am unable to offer an opinion on the points mentioned in the correspondence above referred to.

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No. 2357, dated 6th November 1871.

From the Sanitary Commissioner, Hyderabad Assigned Districts, to the First Assistant Resident, Hyderabad.

I HAVE the honour to acknowledge the receipt of your Letter No. 2372, dated 31st ultimo, with enclosure, and in reply to state that there are no officers subordinate to me from whom I could get the information required.

2. The records of insanes treated in the lunatic asylums in India show the supposed cause of insanity in each case. An analysis of these tables, "Causes of Insanity," will show the number of cases of insanity attributable to the use of hemp.

3. It is generally said, and I believe with much truth, that when a man "runs amuck" or a female commits "suttee," that before committing the act they are intoxicated by the use of hemp in some form or other.

No. 725-65, dated 3rd May 1872.

From Lieutenant *Crawford B. Cook*, Officiating Assistant Secretary to the Chief Commissioner, British Burma, to the Secretary to the Government of India, Department of Agriculture, Revenue and Commerce.

I AM directed to acknowledge the receipt of your letter No. 345, dated 10th October 1871, requesting that investigations may be carried out in order to ascertain, as far as possible, the effects of the use or abuse of ganja and the several preparations of hemp, and their alleged influence in regard to exciting to violent crime.

2. In reply I am directed to submit, for the information of the Government of India, a copy of correspondence as per accompanying list, containing the opinions of the most experienced officers in the province on the subject. Ganja is very little used by the Burmese, and what consumption there is in British Burma is almost confined to coolies and immigrants from India.

3. With reference to paragraph 5 of your letter under acknowledgment, I am  
 \* Paragraph 13. directed to attach an extract\* of the Excise Report for 1870-71, which contains the Chief Commissioner's views at length as regards the small amount of revenue derived from the privilege of retailing ganja in this province, and the possible advantage to the country, if its consumption were absolutely stopped :—

1. No. 469-502-269, dated 8th November 1871, from Secretary to Chief Commissioner, to Commissioners and Heads of Departments.

2. No. 1664, dated 4th December 1871, from Deputy Inspector General, Indian Medical Department, to Secretary to Chief Commissioner.

3. No. <sup>114</sup>~~114~~, from Superintendent, Lunatic Asylum, Rangoon, to Secretary to Chief Commissioner.

4. No. 1790, dated 11th December 1871, from Inspector General of Police, to Secretary to Chief Commissioner.

5. No. 33, dated 19th December 1871, from Commissioner, Tenasserim, to Secretary to Chief Commissioner, with five enclosures.

6. No. 10, dated 13th January 1872, from Commissioner, Arakan, to Secretary to Chief Commissioner, with six enclosures.

7. No. 1808, dated 19th January 1872, from Inspector General of Police, to Secretary to Chief Commissioner.

8. No. 65, dated 25th January 1872, from Commissioner, Tenasserim, to Secretary to Chief Commissioner, with two enclosures.

9. No. 249-13, dated 8th February 1872, from Commissioner, Pegu, to Secretary to Chief Commissioner, with nine enclosures.

10. No. 208, dated 12th March 1872, from the Inspector General of Prisons, British Burma, to Secretary to Chief Commissioner of British Burma.

\* Thirteen are returned as uncertain and unknown.

No. 469-502-269, dated 8 November 1871.

Circular by Lieutenant *C. B. Cooke*, Officiating Assistant Secretary to Chief Commissioner, British Burma.

COPY of Letter, No. 345, dated 10th October 1871, from the Secretary to the Government of India, Department of Agriculture, Revenue and Commerce (see page 1), the above forwarded to Commissioners of Divisions, Inspector Generals of Police and Prisons, Deputy Inspector General of Hospitals, Indian Medical Department, Pegu Division, and the Superintendent, Lunatic Asylum, Rangoon, with a request that a report upon the subject referred to may be submitted at an early date.

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No. 1664-71, dated 4 December 1871.

From the Deputy Inspector General, Indian Medical Department, Pegu Division, to the Secretary to the Chief Commissioner of British Burma.

I HAVE the honour, with reference to your No. 501-269, General Department, Miscellaneous, dated 8th November 1871, attached to Letter No. 345, dated 10th October 1871, from the Secretary to the Government of India to the address of the Chief Commissioner, British Burma, regarding the alleged action of the abuse of ganja in the production of insanity, and other dangerous effect, to state that:—

2. The ordinary physiological effects of charas, ganja, bhang or subjee or sidhee-majum and hashisch are too well known to need repetition or detail—their “*vis. narcotica, phantastica, dementans*” point only to their reputed power to produce a singular kind of insanity of temporary duration, but they are known to excite at times to acts of violence, and the *adut* smoked by the Malay when preparing to run “amok” is a preparation of hemp and opium.

3. That the inordinate and protracted use or abuse of the above preparations of hemp lead to confirmed insanity under certain conditions can scarcely admit of doubt. Among 112 insanes in the lunatic asylum at this station six cases are traced to this cause, and of 17 military insanes transferred from regiments at out-stations in Burma to the Garrison Detail Hospital, *en route* to Madras, during the last five years, two are returned by the Regimental Medical Officer as due to the abuse of bhang and ganja, and it is probable that more care\* might have traced some of the other cases to the same cause.

4. I regret having no personally-recorded data at hand, but extended excessive use of the preparations of hemp is not inactive with natives in the causation of confirmed mental disease; yet it appears doubtful if it is a more frequent cause of this class of diseases in India than is the intemperate use of alcoholic preparations, of many of the effects of which it appears to partake, in Europe; but no reliable data exist to decide even on the broad question of insanity, and still less in special questions, whether the proportion of insanes in Asia is similar or otherwise to those in Europe.

*P.S.*—There still exists an old Chinese work translated into French, and perhaps into other languages, wherein it is made to appear that *chunvre* (hemp), or *mayo* as it is also termed, was used in China in the third century of the present era as an anæsthetic. There is, however, no mention of its action, remote or exciting, in producing insanity.

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\* Thirteen are returned as uncertain and unknown.

No. 114—R. L. H., dated

1871.

From Surgeon *H. Griffith*, in Medical Charge, Lunatic Asylum, Rangoon, to the Secretary to the Chief Commissioner of British Burma.

I HAVE the honour to submit a copy of a letter addressed to the Deputy Inspector General of Hospitals, Indian Medical Department, Pegu Division, on the extent to which the abuse of ganja produces insanity and other dangerous effects.

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No. 113, dated 26 November 1871.

From Surgeon *H. Griffith*, Superintendent, Lunatic Asylum, Rangoon, to the Deputy Inspector General of Hospitals, Indian Medical Department, Pegu Division.

WITH reference to No. 1504-71, dated 10th November 1871, anent the extent to which the abuse of ganja produces insanity and other dangerous effects, I have the honour to submit that, during a residence of five years in the Central Provinces, I found that the practice of smoking ganja was very common in all the districts, and I had excellent opportunities when in charge of a central jail there of witnessing its effects.

2. A report, however, to be of any value should be illustrated with cases and statistical tables, and as I do not now possess these I can only give my experience succinctly from memory.

3. I do not think that a moderate use of the drug does in all instances, as I have heard it asserted, induce mental habitude and premature old age, but the habitual abuse of ganja must undoubtedly ruin the health and permanently weaken the mental faculties.

4. A very important question connected with the use of this drug is that of the deleterious effects resulting from altogether and suddenly abandoning its use after a long practice and when the system has become habituated to it.

5. That the sudden prohibition of the usual dose of ganja produces intense languor and anxiety for a time and frequently œdema, diarrhœa, and other troublesome symptoms is well known to all who have held medical charge of gaols in this country; but I believe that medical men are very often misled by the sufferers greatly exaggerating these symptoms in hopes of being indulged with the accustomed doses, and that more weight has been attached to these symptoms by them than they really deserve.

6. My experience proves that bad effects from a sudden and complete prohibition of the drug may only be expected in persons who have been enfeebled by age or disease, and when suffering from the depressing effects of serious injury, and that it is never necessary to reduce the accustomed dose gradually, and shortly after admission the health of the most confirmed ganja smoker invariably improved under enforced abstinences.

7. I found that when men had become thoroughly accustomed to the use of the drug, that there was less likelihood of its producing insanity and other injurious results, provided the quantity taken was not large, and in almost every case I can remember, there are six now in the asylum, mental derangement occurred in those who took large quantities at the commencement. With them there invariably occurred a species of insanity closely resembling delirium tremens; indeed, the after effects of ganja much resemble those symptoms produced by alcohol; the actual attack of insanity often follows upon a debauch of more than usual extent of duration, and I have known it ushered in by a fit of epilepsy.

8. In some who are strongly predisposed by their constant abuse of ganja, it follows upon some accident or shows itself during the treatment pursued for

the relief of some bruise or fracture, showing that the nervous system is seriously injured.

9. In no two patients is insanity from this cause ushered in or continued with precisely the same appearance, for the different propensities and habits of different patients lead of necessity to a difference of idea and of expression in each. The precursory symptoms of a paroxysm are, however, very frequently as follows. The patient is strongly affected by every emotion or passion of the mind, he becomes distrustful, is very fretful and irascible on slight occasions, he is subject to a kind of uneasiness which he cannot describe or account for, experiences a degree of fear, and feels either little disposition or absolute incapacity to sleep.

10. The recoveries from mental disorders induced in this way are numerous

No. 1790, dated 11 December 1871.

From Major *H. Duncan*, Inspector General of Police, British Burma, to the Assistant Secretary to the Chief Commissioner of British Burma.

IN reply to your Docket No. 499-269, of 8th November, and reminder of the 7th instant, reached to-day, I have the honour to state, that from the districts of Toungoo, Amherst, Rangoon, Tavoy and Thayetmyo, I have received reports from the superintendents of police to the effect that they are aware of no instances where the cause of crime has been the excitement consequent on the abuse of ganja or bhang.

Indeed, these drugs are not used by the Burmans, although they are by natives of India in the seaport towns.

The reports from other districts will be communicated as soon as received.

No. 33, dated 19th December 1871.

From Colonel *D. Brown*, Commissioner of the Tenasserim Division, to the Chief Commissioner of British Burma.

WITH reference to your Docket No. 498-269, General Department (Miscellaneous), calling for report on the effects of ganja, I have the honour to forward herewith the reports I have received from the district officers of this division (excepting Shwe-gyen and Mergui) and from the Civil Surgeon, Maulmain. It appears that ganja is not largely used here; its pernicious or deleterious effects on the brain cannot therefore be so well tested as in India. As far as I know there has not in this division been a case of dementia produced by the use of ganja, nor has the use of it tended to the increase of crime.

No. 266, dated 28th November 1871.

From *J. K. Macrae*, Esq., Magistrate of Maulmain, to the Commissioner of Tenasserim Division.

THE undersigned has the honour, in reply to your Docket No. 193, dated 17th instant, to report that the use of bhang or Indian hemp is very small in this town, and that he has not heard of an instance in which it was known to induce madness or cause violent crime.

No. 98, dated 18th December 1871.

From *George Marr, Esq., M.D.*, Civil Surgeon of Maulmain, to the Commissioner of the Tenasserim Division.

WITH reference to your Docket, No. 239, dated 9th instant, forwarding copy of Circular No. 345 from the Secretary to the Government of India, I have the honour to report :

(1.) That I am not acquainted with any case in which the abuse of ganja or its preparations had produced insanity, neither am I aware of any instance in which it has excited to violent crime.

(2.) That its effects, when indulged in for a length of time, are, as far as I have observed, similar to those of opium, viz., in inducing emaciation and ultimately diarrhoea and dysentery, which terminate fatally.

(3.) Mr. Innez, late ganja farmer of this town, states that he has not observed any ill effects from its use, other than those above mentioned. The consumption of ganja in Maulmain he states to be on an average about  $\frac{1}{2}$  viss, i.e., 1 $\frac{1}{2}$  lbs., per day ; that about 500 persons in Maulmain are in the habit of using the drug, and that these are almost entirely Mussulmans, both of Madras and Bengal Presidency, a few Coringees and Madrassesees, and no Burmese of the town ; the average daily consumption per man Mr. Innez states to be 1 pie weight, equal to about 3 drachms avoirdupois.

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No. 69, dated 22 November 1871.

From Colonel *E. M. Ryan*, Deputy Commissioner of the Amherst District, to the Commissioner of the Tenasserim Division.

WITH reference to your Circular Docket in this Department, No. 193, dated 17th instant, I have the honour to report that the decoctions from ganja and bhang are not used by the Burmese, its use being confined to the natives of India, the number of whom are few in the district.

I am, however, informed on inquiry that excessive use of ganja renders a person liable to insanity ; but not a single case has been brought to my knowledge that such insane persons are more dangerous or more liable to commit violent crime than any other insane person.

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No. 567, dated 27 November 1871.

From Lieutenant-Colonel *E. J. Spilsbury*, Deputy Commissioner of Tavoy, to the Commissioner of the Tenasserim Division.

WITH reference to your General Department Circular Docket, No. 193, of the 17th instant, I have the honour to report that the use of ganja has ceased in this district from the year 1865-66, and bhang is not known here, consequently I am unable to furnish the information called for.

No. 172-24, dated 6 December 1871.

From Major *M. B. S. Lloyd*, Deputy Commissioner of Toungoo, to the Commissioner of the Tenasserim Division.

I HAVE the honour to acknowledge receipt of your Circular Docket, No. 193, dated 17th November 1871, forwarding copy of Letter, No. 345, dated 10th October 1871, from A. O. Hume, Esq., c.B., Secretary to the Government of India, Department of Agriculture, Revenue and Commerce (General).

2. I think I am right in stating that the indigenous people of the country never touch ganja or any of its preparations.

3. I have seen a few natives of India suffering from the effects of an excessive use of this drug, but they have all appeared to me to be more eccentric than excited, wearing peculiar clothes, their hair matted together.

4. I have never, as far as I remember, had to dispose of a case against a native of India as a criminal, and found that he had been excited to commit a violent crime through the use of ganja.

5. I am very certain that no person would take ganja to excite him to commit a particular crime—its first stage is to cause quarrelling and consequently often sudden fighting, the next is to lead a man under its influence to suppose that the earth is opening under him, or that the roof of the house is falling in.

6. As regards bhang, I have not sufficient experience of its effects to venture an opinion. It is not used by Burmans.

No. 10, dated 13 January 1872.

From Colonel *J. F. J. Stevenson*, Commissioner of Arakan, to the Secretary to the Chief Commissioner of British Burma.

In submitting the following précis of reports upon the effects of ganja, as directed in your Letter No. 496-269 of the 8th November last, I have the honour to add for myself that I believe that, like many other drugs, as well as stimulants, it has its uses as well as its abuses. Some people are the better for using it—a few the worse. The several reports are herewith sent.

Deputy Commissioner, Akyab, No. 342, dated 8th January 1872.

Is not in possession of facts to show that the effects of indulgence in ganja are attended with very fatal results.

Cannot say much from his own personal experience, but has always heard that the use of ganja, bhang and other preparations of hemp is very deleterious, producing insanity and inciting to violent crime.

Deputy Commissioner, Ramree, No. 196, dated 25th December 1871.

Ganja affects persons who are in the habit of taking it in much the same way as opium; but a novice becomes uproarious under its effects, which last several hours. Does not think that its alleged influence in exciting to violent crime is on a par with opium, or that it has any special influence.

Dr. Mountjoy, Civil Surgeon, Akyab, No. 68, dated 12th December 1872.

The effects produced by ganja when taken regularly have not come under his observation.

Is acquainted with several persons who habitually indulge in ganja-smoking, but has not seen one among them who has suffered from insanity in any of its forms, specially that formidable form called mania—raving madness; on the contrary, he has found some of them are “very witty,” and some may be made to work much harder without grumbling than others who do not indulge in it. But he adds that ganja makes the temper irritable.

Deno Nath Doss, Sub-Assistant Surgeon, Akyab, No. 67, dated 29th November 1871.

States

States that both ganja and bhang produce insanity, and that they also tend to excite to violent crimes. Adds that during his long medical service he has had frequent opportunities of eliciting by enquiry from transported prisoners, natives of Hindustan, that most of the acts of Mutiny of 1857 were undertaken under the influence of bhang, charas, or ganja.

Dr. Alexander Thomas, Civil Medical Officer, Kyouk-Thyoo, No. 3, dated 13th December 1871.

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No. 342, dated 8 January 1872.

From *W. DeCourcy Ireland*, Esq., Deputy Commissioner, Akyab, to the Commissioner of Arakan.

THERE are four shops in the district, three at the Náf and one at Akyab. The farmer imported during the year 1871 16 maunds only. The consumption of ganja is not very great, and is almost entirely confined to natives of India.

I am not in possession of any facts tending to show that the effects of indulgence in the drug are attended with very fatal results.

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No. 196, dated 25 December 1871.

From Lieutenant-Colonel *C. P. Hildebrand*, Deputy Commissioner of Ramree, to the Commissioner of Arakan.

WITH reference to your Endorsement, No. 125-A, dated 20th ultimo, forwarding copy of a letter from the Secretary to the Government of India, on the subject of ganja, I have the honour to state that I cannot say much on the subject from my own personal experience, but I have always heard that the use of ganja, bhang, and other preparations of hemp, is very deleterious, producing insanity and inciting to violent crime. The plant is not much cultivated in this country, nor are the Burmese or Arakanese much addicted to the use of it. But it is a good deal used by the natives of India who come to Burma. I would certainly recommend that in British Burma the sale of all preparations of hemp be confined to sale for medical purposes only. I would also recommend that its cultivation in British Burma be prohibited.

I enclose a copy of a letter I have received on the subject from the medical officer here.

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No. 66, dated 13 December 1871.

From *Alexander Thomas*, Esq., Medical Officer of Kyouk-Phyoo, to the Deputy Commissioner of Ramree.

WITH reference to your Memorandum, dated 11th December 1871, calling for report on the subject of ganja and bhang, I have the honour to state that both these drugs produce insanity if long continued, and that they also tend to excite to violent crimes; and in illustration of this I beg leave to quote an ancient Sanscrit saying, "*Oogroprociety*," which means that all such who are consumers of ganja are easily given to a destructive propensity. I have had during my lengthened medical service frequent opportunities of eliciting by inquiry from the natives of Hindustan who have been sent here as transported life-prisoners that most of their bloody work was undertaken whilst under the influence of bhang, charas, or ganja, and have, moreover, heard that many of the acts of Sepoy insubordination owe their origin to ganja; indeed, this drug is said to have been largely brought into play at the time of the Sepoy Rebellion



in 1857 to infuriate the men. I have observed in all smokers of the ganja dyspepsia to be very common, and in course of time the lungs of such become affected, and not unfrequently end in phthisis and hæmoptysis; palpitation of the heart is a frequent complaint with them.

In conclusion, I respectfully beg to say that a prohibition to the cultivation of the plant would be a boon to India.

No. 312, dated 1st December 1871.

From *Henry Buckle*, Esq., Officiating Magistrate of Akyab, to the Commissioner of Arakan.

IN reply to your Docket, No. 126-A, Abkari, dated 20th November, calling for a report on the use and effects of ganja, I have the honour to state that, from inquiries I have made, the use of ganja in Akyab town seems to be almost exclusively confined to Bengalees. It affects persons who are in the habit of taking it in much the same way as opium; but a novice becomes uproarious under its effects, which last several hours.

2. Regarding the alleged influence of ganja in exciting to violent crime, I do not think it is on a par with opium, or that it has any special influence.

No. 68, dated 12th December 1871.

From *W. J. Mountjoy*, Esq., Civil Surgeon of Akyab, to the Commissioner of Arakan.

IN reply to Letter No. 345, I am unable to give any information regarding the effects of ganja. The medicinal properties of ganja are of course well known, but the effects produced by the herb when taken regularly have not come under my observation. When I first came to Akyab, many years ago, ganja was scarcely known in the province, but of late years it seems to me the use of the herb, as well as opium, is far more widely spread amongst the people. It appears to me that a native gentleman would be able to make a better report on this particular subject than a European surgeon could possibly do, so I asked the sub-assistant-surgeon, Mr. Deno Nath Doss, to oblige me with his ideas on the drug. That officer's Report I have now the pleasure to forward to the Commissioner of Arakan.

No. 67-A, dated 29th November 1871.

From *Babu Deno Nath Doss*, Sub-Assistant Surgeon of Akyab, to the Civil Surgeon, Akyab.

I HAVE the honour to acknowledge the receipt of a copy of a Letter, No. 345, dated 10th October 1871, from the Secretary to the Government of India to the address of the Chief Commissioner, British Burma, enquiring whether the abuse of ganja or bhang (the dried leaves of the plant) leads to insanity and other acts of violence.

I have been acquainted with several persons who habitually indulge in ganja-smoking, but I have not seen one among them who has suffered from insanity in any of its forms, especially that formidable form called mania (raving madness), in which he talks most incoherently, and shows a great tendency to do violence to himself and to others. On the contrary, I have found some of them are very witty, and some may be made to work much harder, without grumbling, than others who do not indulge in it. If a habitual indulger of ganja

ganja is also an insane, it is, I believe, a mere coincidence, but not a causation; *i.e.*, the smoking of ganja is not the cause of insanity, but that insanity would have come on independent of it, as it often does, from multifarious other causes. Smoking of ganja, however, I must say, when carried to excess for a good length of time, produces dulness of intellect and a carelessness to everything that is conducive to his interest. It also makes the temper irritable.

Confirmed smokers of ganja, it appears, die more generally from dysentery than from any other disease.

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*Medicinal Effects of Ganja or Bhang.*

It is often administered in the form of tincture of ganja, extract of ganja, or bhang, pounded on a common curry-stone and dissolved in water. In speaking of the uses and actions of ganja, or bhang (the dried leaves of it), I speak only of those which I have gathered from my own personal experience.

(1.) It sharpens the appetite very much, so that a person can eat a quarter, if not half, the quantity more than his ordinary diet, without any subsequent bad consequences. Inclination for eating sweets is greater than for meat.

(2.) It produces a pleasant reverie; a variety of pleasing objects in rapid succession rise and vanish, to be followed, after a momentary interval, by other objects equally agreeable.

(3.) It invariably brings on sleep. I have seen, in cases of *delirium tremens*, where morphia failed to act as a hypnotic, tincture of hemp, or ganja, induced sleep.

(4.) It is an aphrodisiac. When continued for a few days it excites venereal desires.

(5.) It is an antispasmodic. I have cured puerperal and idiopathic tetanus by its use only, and I have given it in cases of neuralgia with success.

(6.) It causes a cheerful state of mind, causing the people not in the daily habit of using it to sing and laugh. During the Durga Puja holidays, the day the goddess is thrown into the river, it is customary with all Hindus in Bengal, males and females, to drink bhang, being a ready exciting cause of merriment. While they are under its influence they sing and fall into repeated fits of laughter, which end in profound sleep, without any bad result worthy of notice.

(7.) Tincture of hemp and solution of bhang are slightly astringent.

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No. 1,808, dated 19th January 1871.

From Major *H. Duncan*, Inspector General of Police, British Burma, to the Assistant Secretary to the Chief Commissioner of British Burma.

IN continuation of my Letter, No. 1,790, of 11th December 1871, I have the honour to inform you that from the superintendents of the remaining districts in the province I have reports to the effect that they are aware of no instances where the perpetration of crime has resulted from the abuse of ganja.

No. 65, dated 25th January 1872.

From Colonel *D. Brown*, Commissioner of the Tenasserim Division, to the Secretary to the Chief Commissioner, British Burma.

I HAVE the honour, in continuation of my Letter, No. 33, of the 19th December last, to forward two copies of Reports\* I have received from the Deputy Commissioners of Shwe-gyen and Mergui, regarding the alleged action of the abuse of ganja in producing insanity.

\* No. 74-5, dated 15th December 1871.

No. 69, dated 17th January 1872.

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No. 745, dated 15th December 1871.

From Major *A. G. Duff*, Deputy Commissioner of Shwe-gyen, to the Commissioner of the Tenasserim Division.

WITH reference to your Circular (General, Miscellaneous), No. 206, of 9th instant, I have the honour to state that the use of ganja, or other preparations of hemp, in this district is, if any, so small that no evil effects have apparently ever resulted from it. The Civil Surgeon here reports that, during a practice of five years, not one case of the use of either has ever come to his knowledge.

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No. 69, dated 17 January 1872.

From Major *W. Munro*, Deputy Commissioner of Mergui, to the Commissioner of the Tenasserim Division.

I HAVE the honour to acknowledge receipt of your General Department, Miscellaneous, Circular Docket, No. 193, of 17th November (received 20th December), and in reply I have the honour to inform you, that from inquiries made, I find the Mahomedan portion of the community of Mergui use ganja, but not to any great extent; as they do not use it to excess, bad results are not produced in this district among the Mussulman population, nor has it tended to increase of crime. Small quantities of hemp are occasionally grown by the Shans in their toungyas, but is, I am informed, generally used by them for medical purposes; occasionally, however, they do smoke it. The Burmese do not use ganja, and the Chinese prefer opium.

As far as this district is concerned there is no necessity for action on the part of Government in the matter.

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No. 249-13, dated 8 February 1872.

From Colonel *R. D. Ardagh*, Commissioner of Pegu, to the Secretary to the Chief Commissioner, British Burma.

IN reply to your Docket No. 497-269 of the 8th November last, on the subject of the effects of the use or abuse of the several preparations of hemp.

2. I submit papers as follows:—

From Magistrate, Rangoon, No. 13 of 19th January 1872.

From Superintendent,\* Lunatic Asylum, dated 26th November 1871.

From

From Deputy Commissioner, Bassein, No. 187-6, dated 12th December 1871.

From Civil Surgeon, Bassein, No. 129, dated 11th December 1871.

From Deputy Commissioner, Myanong, No. 100-4, dated 12th December 1871.

From Medical Officer, Henzada, No. 244, dated 12th December 1871.

From Deputy Commissioner, Prome, No. 6-5, dated 10th January 1872.

From Deputy Commissioner, Thayetmyo, No. 296-4, dated 3rd January 1872.

From Medical Officer, Thayetmyo, No. 61, dated 22nd December 1871.

3. These set forth what is known and has been observed of the effect of ganja and bhang on the human system in this province.

4. As a rule the Burmese of the country are not addicted to it. They prefer, when they use drugs, opium and its preparations, which they can get at the licensed opium shops.

5. The ganja and bhang shops are, as you will find noted in some of the letters, almost entirely for the accommodation of natives of India.

6. That its use degenerates often into abuse, and that an excessive indulgence in it induces mania, will be gathered from the medical reports; and it is also a fact commonly received that natives of India under the influence of bhang or ganja are in a state of mind which excites them to the commission of crimes attended with violence, but from its small consumption in this division such cases are rare here.

7. There does not appear to be any necessity for prohibiting the cultivation of the plant here. What is consumed is chiefly imported. The sale also to consumers has hitherto been limited, licensed farmers not being allowed to vend more than 5 tolahs weight at one time to any purchaser.

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No. 13, dated 19 January 1872.

From Captain *R. C. Evanson*, Officiating Magistrate of Rangoon, to the Commissioner of Pegu.

In obedience to your Docket No. 249-6, General Department (Miscellaneous) of the 10th November last, I communicated with the Civil Surgeon, and his letter, on the subject of ganja and bhang producing insanity and other diseases, I herewith submit for your information.

In my Office or in that of the Police there are no returns or datum by which to compile a report on the subject, and I therefore can only state what I have myself noticed, and what I have learned from others, during my service in India and Burma since 1857.

While serving in a Native Infantry Corps, I observed that the men known to be addicted to the consumption of ganja or bhang were the most refractory, troublesome, and in many cases violent characters. During five years while I was Adjutant of my corps, I have known some smart and excellent sepoys go completely to the bad from the use of the drug and in more than one case become quite insane.

During the last four years, as Magistrate in Rangoon, many cases have been in my Court in which opium and ganja smokers and eaters have been concerned.

Having made no notes as to which drug the various criminals were addicted to, it is impossible to exhibit the cases in which ganja consumers figured in contradistinction to those affected by opium, but both, undoubtedly, exercise a strong influence in exciting to violent crime and in making criminals of men who without their use would, in all probability, not become so.

The moderate use of the drug, though not impairing the health or producing other bad effects at first, will soon, in my opinion, create lazy, idle habits and a

vitiated taste for larger quantities. The people in Rangoon town chiefly addicted to the use of ganja are the Hindus (Bengalees and Madrassesees). I have ascertained from the farmer's books that about 20 per cent. Mahomedans and 60 per cent. Hindus indulge in ganja, whereas only 1 per cent. of Burmese do so.

I regret that, in consequence of pressure of judicial work, the submission of this report has been delayed.

No. 187-6, dated 12 December 1871.

From Captain *W. W. Pemberton*, Deputy Commissioner of Bassein, to the Commissioner of Pegu.

WITH reference to your General Department, Miscellaneous, No. 249-2, dated 10th ultimo, I have the honour to state that ganja is very little used by the Burmese, and no cases are known in this district in which the excitement to violent crime is supposed to have proceeded from the use of ganja or bhang.

Copy of the Civil Surgeon's report on the above subject is herewith enclosed.

No. 129, dated 11 December 1871.

From *A. Calloway Nisbet*, Esq., Civil Surgeon of Bassein, to the Deputy Commissioner of Bassein.

IN reply to your Foreign Department, General, No. 183-4, I have the honour to report that I have had no opportunity of witnessing the effect of using ganja habitually, or occasionally even, except as a remedy in diseases.

I have long discontinued its use in consequence of its having produced in two cases in rapid succession symptoms of so decidedly maniacal a tendency as rendered its employment unjustifiable, in spite of its admitted styptic action in certain alimentary and uterine discharges. I have reason to think that my experience is by no means singular, and from what I have myself seen and ascertained from good medical authority, I believe that ganja does produce delusions in some minds tending either to excite to crime or groundless remorse for purely imaginary criminality. It is only right to add that my experience of the use of the drug is not great, as the cases above referred to occurred early in my Indian career; and in England, America, and in the Colonies I have visited, and they are many, I never saw it employed.

No. 100-4, dated 12 December 1871.

From Captain *W. C. Plant*, Deputy Commissioner of Myanoung, to the Commissioner of Pegu.

I HAVE the honour, in reply to your Docket No. 249-3, Miscellaneous, requesting a report, after communication with the Medical Officer, in the use of ganja, &c., and, in accordance thereto, beg to submit a report which the Medical Officer has prepared on the subject.

2. Dr. Paul's report leaves me little to remark upon, because ganja is not in use with the natives of Burma, and the few Hindus and Mahomedans in the district are the only people who use the drug.

3. I don't know of an instance in which the abuse in use of ganja has been the cause of crime of a violent nature. I have heard of Mahomedan Malays running

running "amuck" when under the influence of ganja or bhang; but the use of ganja has often made a Hindustanee sentry negligent on his post and escape of prisoner has been the consequence, but nothing of a grave nature has come under my notice.

4. Burmese, Chinese, and other cognate races in Burma use opium in preference to ganja, which seems to be only raised for sale to some of the natives of India, for whom (ganja) farms have been permitted in the district. The local abkari rules prohibit holding a greater quantity than 5 tolahs of ganja (alike with opium) in the possession of a single person, and consequently the quantity grown is small and only raised in small patches.

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No. 244, dated 12th December 1871.

From *P. G. Paul*, Esq., Civil Medical Officer, Henzada, to the Deputy Commissioner of Myanong.

IN obedience to instructions conveyed in your General No. 100—2, dated the 11th December 1871, in reference to Circular Letter, No. 345, General, dated Simla, the 10th October 1871, from A. O. Hume, Esq., C.B., Secretary to the Government of India, in the Department of Agriculture, Revenue, and Commerce, to the address of the Chief Commissioner of British Burma, requesting information as to whether the abuse of ganja produces insanity and other dangerous effects, &c., &c., I beg to offer the following observations, gained chiefly by personal experience, from among those who have sold and used the drug for a considerable time.

2. Often in my walks round the towns (both here and other places), I have gone into the ganja farms, conversed and watched the doings of the smokers of the drug, who had preferred the using of it at the place of the purchase.

3. The persons who frequented the farms were chiefly men of the Hindu and Mahomedan castes. Burmese and Chinese I have seldom met with.

The probable ages of the parties were 40, 45, and upward, and who were in the habit of using the drug daily, both by the chillum and by portion, and in strength of variable quantities, some of whom had commenced the use of the narcotic at a very early age, and have kept on to its use ever since; the expressions of whose feelings were, I considered, worth noting for information.

On asking one of them the effects produced by the drug, I was told unreservedly that a mixture of ganja and tobacco in equal proportions, smoked from a chillum, produced a pleasant species of intoxication and great mental cheerfulness (now raising him to the skies, and then lowering him to his original level), made him active and energetic, kept him in good spirits, and merry all the time the intoxication lasted, gave him very sharp appetite, he was able to eat largely, and that he usually enjoyed his food (of whatever kind placed before him) with relish.

The foregoing are the sensations caused by a full dose of ganja, worth three pies, or quarter of an anna in Burma, and one pie, or 1-12th part of an anna in India, on an inveterate smoker. The intoxication in such cases is said to last about 3½ to 4 hours (without affecting the intellectual powers), when the chillum is again replenished, as the effects are passing off, so that a confirmed ganja smoker is obliged to have recourse to his chillum five or six times in the 24 hours, to keep himself cheerful and merry, but beyond these he could not consume more.

The expenditure on the drug would cost a great smoker 1½ or 1¾ annas only per day. Labourers doing the most ordinary work, and receiving a due proportion of wages, have it in their means to supply themselves with the quantity of the drug for their daily consumption from their earnings, and for an ordinary smoker the outlay will be less, varying from 4 to 6 pies in Burma, and 1 or 2 pies, or 1-12th or 1-6th of an anna in India for his daily consumption.

The cost of bhang, which is chiefly used in portions, is cheaper, as it is procurable in large quantities at a less price, so that 3 pies worth in Burma and 1 pie worth in India would be amply sufficient for any drinker of the beverage in the 24 hours.

The mode of preparing the beverage is as follows :—

The large leaves and capsules of the *Cannabis Indica* without the stalks, are at first soaked in water, and after undergoing a thorough washing, are ground down to a very fine paste, which is then mixed with a sufficient quantity of milk cream and of sugar, and taken.

The drink, I believe, is used twice daily, and only by saquirs and those who are well-to-do, as its preparation involves a certain amount of outlay, and which cannot be afforded by those poorer in circumstances.

4. I beg further to observe that I have not in my experience seen bad effects arising solely from the daily use of ganja or bhang, such as confirmed cases of insanity or a propensity by them to commit violent crimes; on the contrary, I learn that the ganja smokers and bhangees, as a rule, are very timid, retiring, and respectful, and that they do not like to be interfered with, nor do they like to interfere with others.

The daily outlay for procuring the drug also being so very small, and which could easily be met with from the daily earnings, there need be no incentive to commit theft or other misdemeanours, as those addicted to opium are compelled to do, so as to have sufficient means at their disposal to meet their increasing demands daily, to satisfy the inordinate cravings of the general system.

5. I beg, in conclusion, to observe that although ganja and bhang, like other narcotics, lose their bad effects when they have been taken daily for a considerable time; but in the meantime I beg also to express my opinion that these drugs, or other excitants, would at the long run prove prejudicial to the health of the indulger.

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No. 6—5, dated 10th January 1872.

From Captain C. W. Street, Deputy Commissioner of Prome, to the Commissioner of Pegu.

IN reference to your General Department (Miscellaneous), No. 249—4, dated 10th November 1871, forwarding copy of circular No. 345, on the subject of the abuse of ganja and its effects, I have the honour to inform you that from the inquiry I have made there appears to be but very little ganja used in this district, and there are no cases known where the abuse of it has excited to violent crime or produced insanity.

The civil surgeon reports that he is not yet in a position to afford the information required.

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No. 296—4, dated 3rd January 1872.

From Lieutenant Colonel Horace Browne, Deputy Commissioner of Thayet-myó, to the Commissioner of Pegu.

WITH reference to your General (Miscellaneous), No. 249—5, dated 10th November 1871, regarding the abuse of ganja, I have the honour herewith to forward a copy of the Thayet-myó Civil Surgeon's letter, No. 61, dated 22nd instant.

Ganja is rarely or ever abused or even used by the natives of this country. The consumption of it here is confined entirely to the natives of India, and is very small. With the exception of one instance (that of a servant of my own, who became perfectly idiotic by the excessive use of ganja) I have had no experience of its evil effects in this district. In the seaport towns of Burma I have seen many instances of insanity and violent crime attributable to ganja and bhang.

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No. 61, dated 22nd December 1871.

From *W. Hanks, Esq.*, Civil Surgeon of Thayet-myo, to the Deputy Commissioner of Thayet-myo.

WITH reference to your memorandum No. 296—2, dated 18th December 1871, forwarding circular No. 345 from the Secretary to the Government of India to the Chief Commissioner of British Burma, requesting information on the effects of the abuse of ganja and other preparations of hemp, I have the honour to inform you of my regret that, owing to my experience of such cases being so exceedingly small, I am consequently unable to supply particulars from which any reliable conclusion could be drawn.

No. 208, dated 12th March 1872.

From *W. P. Kelly, Esq.*, Inspector General of Prisons, British Burma, to the Secretary to the Chief Commissioner of British Burma.

WITH reference to No. 345 from Secretary to Government of India, Department of Agriculture, &c., dated 10th October 1871, forwarded with your General Department, Miscellaneous, No. 500—269, dated 8th November, I have the honour to state that the medical officers and officers in charge of jails were asked, on the 23rd November last, to favour me with their opinions as to whether the use of ganja produced insanity, or was an inciting cause of violent crime; I have only just received replies from all.

2. I deduce from the opinions expressed in the above-mentioned replies, that the use of ganja in moderation produces as little ill effect as any other stimulant used sparingly; it is not necessary to enter into a description of the effects of its use in detail, the question being simply, does it produce insanity or lead to crime? That its abuse does induce, and directly produce, madness, there can, I think, be no doubt. I recollect many cases of it (although some medical officers and others say that it does not). I think there were six or seven insanes transferred to the lunatic asylum here last year from the jails of the province whose disease had originated from excessive use of ganja; they were all natives of India.

3. Officers in charge of jails as a rule know nothing of the previous history of prisoners, or of the circumstances connected with the crimes for which they are confined, and I cannot recollect any case in which crime was noted as being directly traced to the excitement caused by a large dose of ganja; but it appears to me that it must have the effect of sometimes causing strong mental disturbance and consequent violence of action in common with all other stimulants when taken to excess.

4. Ganja is almost exclusively consumed by natives of India. Burmans never were in the habit of using it (but I am sorry to hear that they are beginning to smoke it in places where they are much brought into contact with natives of India). There were 1,112 natives of India confined in the jails of the province last year, but I have not, as stated above, been informed in any case that the abuse of ganja was the inciting cause of crime amongst them.

5. The prolonged abuse of ganja enfeebles both mind and body, and deprives men of courage. Should a man in such a state deliberately want to commit a crime, an extra dose of his accustomed stimulant would be necessary to restore his nerve sufficiently to act, and in such a case the crime might erroneously be attributed to excitement caused by ganja.

6. Looked at from a jail officer's point of view, the use of ganja in moderation has one advantage over opium, that is, its cheapness. No consumer of it need steal to procure the means of purchasing it; whereas on the other hand one of the principal causes of petty thefts and crimes amongst Burmans



in Rangoon and other large towns where opium is largely used by them, is its expensiveness. An habitual opium-smoker is unfit for hard work, and is reduced to thieving to obtain money to purchase it.

7. Indian hemp is cultivated in small quantity by Shans and Karens in the north-east of the province, and by Karens in the south.

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*Extract from the Excise Report for 1870-71.*

GANJA.

Para. 13.—The total demand of revenue from the sale of this narcotic was Rs. 22,920; but from this sum must be deducted Rs. 1,586, refunded to the lessee of the farm at Akyab, being the amount of duty paid by him on the article purchased in Chittagong, and Rs. 685, the loss which resulted from a re-sale of the farm at Thayet-myo on the defalcation of the farmer at the commencement of the year. The net proceeds of the monopolies to the Government were therefore Rs. 20,649, whilst the realizations in 1869-70 were Rs. 21,980, a decrease of Rs. 1,331. A new farm was established in the Myanoung District on the 1st of April 1870, and was rented for the year for Rs. 200. The other farms remained as in the previous year, viz., one shop at each of the following places:—Akyab, Naf, Rangoon, Bassein, Thayet-myo, Toungoo, Maulmain. The sale of this article is prohibited at Ramree, Sandoway, Tavoy and Mergui, and the Chief Commissioner considers that no further addition should be made to the number of places for the sale of this pernicious drug, which is smoked only by the natives of India. Indeed, he would be glad to have the opinion of the Commissioners as to the possibility of withdrawing all licenses for the sale of ganja throughout the province. Its use is at present happily little known to the people of the country; at the same time, however, there is every reason to fear that a taste for it may be spread among them by the people of India as in the case of opium. It certainly seems to the Chief Commissioner that it is very desirable to at once sacrifice the small revenue derived from this source and stop the consumption absolutely before the evil comes upon the country. The only sufferers from the cessation of the supply will be a few of the Indian labourers who come to work here during the rice season.

Chief Commissioner considers that the sale of ganja should be limited if not altogether abolished.

They must learn to take the want of ganja as one of the discomforts of a sojourn in a foreign land, for which they are amply compensated by the large earnings they obtain. The Chief Commissioner observes that the percentage of persons admitted to the Dacca Lunatic Asylum in Bengal who had lost their intellect from the effects of ganja, was from—

1860 to 1867	-	-	-	-	45.4 per cent.
1868 to 1870	-	-	-	-	34.7 „

It has been said that some ganja has been grown lately in this province. The cultivation should be at once checked.

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No. 3073, dated 8th July 1872.

From *H. B. Harington*, Esq., M.A., Officiating Secretary to Chief Commissioner, Oudh, to the Secretary to the Government of India, Department of Agriculture, Revenue and Commerce.

I AM directed to acknowledge the receipt of your letter No. 343, dated 10th October last, directing an inquiry in regard to the effects of the use or abuse of the several preparations of hemp, and the alleged influence of ganja and bhang in exciting to violent crime, with the view, if necessary, of imposing restrictions on their use.

2. In reply, I am directed to state that the Magistrates, the Police and Sanitary Departments have been consulted, and special endeavours made to trace the history of certain inmates of the Lucknow Lunatic Asylum, whose condition was supposed to be connected with the immoderate use of preparations from hemp.

3. An abstract of the different replies is annexed; and although there is much variety of opinion, the conclusion warranted by this inquiry seems to be that the ill effects of the use of hemp have been exaggerated. There seems nothing to show that bhang, if used at all, *must* be used immoderately, or that, if used immoderately, it has mischievous consequences. Ganja, it is said, has, when used immoderately, a tendency to produce asthma.

4. That criminal classes use the drugs immoderately is beyond doubt, but it does not seem that the consumption of these preparations acts as a direct incentive to violent crime; although persons bent on committing such crimes do doubtless have recourse to such stimulants to bring them up to the mark, much in the same manner as an Englishman similarly situated has resort to "Dutch courage."

5. Gathering, then, from the general expressions of opinion on the subject that the use of these drugs in moderation is perhaps not hurtful, and that their use in immoderation is not more prejudicial than an immoderate imbibition of alcohol in England, the Officiating Chief Commissioner believes that any interference, on *moral* grounds, with the cultivation and use of hemp and its preparations is uncalled for; and if we attempt to stop their use by a prohibitory duty, we shall only drive the people to the use of a still more deleterious plant, such as the dhatura; for it may safely be assumed that in all countries men will have resort to stimulants of some kind.

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*Abstract of Replies regarding abuse of Ganja and Bhang.*

No. 179, dated 11th January 1872. Mr. Carnegie submits the opinions of his district officers.

Colonel Steel states that from inquiries he has made and information he has received from the medical officer, he is of opinion that there cannot be the least doubt of the deplorable results of indulging in ganja and charas, but the hemp plant, bhang, is not injurious in its effects unless taken in excess, and it is used by Hindus generally mixed with water as sherbet. There is also a concoction of bhang and sweetmeats called majum, which is an accompaniment at festivals and other great gatherings of the brethren, besides many other modes of consumption.

It is true that all have an exhilarating or intoxicating effect according to the amount used, but ganja and charas are the worst, creating in those who indulge habitually weakness, disinclination to take nourishing food, and sometimes insanity.

There can be no doubt that anything which has such a dire and enervating effect must tend to demoralise those who indulge in it, and thus indirectly lead to crime; but he doubts if the abuse of either ganja or bhang is more likely to lead to violent action so much as the abuse of alcohol.

Mr. Kavanagh states that the District Superintendent, Major Sharpe, considers that their effects are as bad, if not worse, than those caused by opium, and that any restriction on the sale of ganja would be very beneficial. He cannot say whether criminals apprehended for theft, &c., are generally bhang-takers or not; but all his inspectors and police officers are unanimous in opinion that the prevalence of the disease "dumma" or asthma is due to bhang, and he believes it is one of the most deleterious drugs that can be taken.

Mr. Kavanagh says that he has never had a criminal trial in which the use of ganja or bhang had anything to do in inducing the crime. The lower classes of religious devotees often use it to produce insensibility and forgetfulness, and the lower castes consume them because they are cheaper than spirits.

These drugs do not stimulate to crime, and he is of opinion that the only objection to the use of them is their being more injurious to the constitution than other expensive drugs.

In the Gonda, Baraich and Kheri districts, the poor consume a good deal of ganja, and Mr. Kavanagh did not notice in them that this circumstance had any remarkable effect on crime. It is not unlikely that there are certain fanatical sects in the Punjab who use ganja and bhang to produce excitement to support them in perpetrating an offence.

Captain Hewett has often heard it alleged that the abuse of ganja produces insanity; but whether it really does so or not he has not been able to ascertain with any degree of certainty. He adds that the use of ganja excites to violent crime; for instances have come before him, whilst investigating cases of robbery or dacoity, in which it has transpired that the defendants, previous to making their attack, had met at a rendezvous, where they had all partaken of bhang, or some other intoxicating and exciting preparation of the hemp plant.

Natives, he knows, generally believe that the use of these preparations imparts bravery, and incites to deeds of personal valour. Sepoys in our native regiments, before the Mutiny, were in the habit of using it a good deal; and while on active service before Delli he knows it for a fact that many of the foremost men and officers of the enemy had partaken largely of this drug before coming into action, for whenever they got to close quarters his "Seikhs" invariably called his attention to the excited and intoxicated appearance of the rebel leaders.

In Captain Hewett's opinion, it would be advantageous to restrict the use of ganja and other preparations of hemp by enhancement of the duty on its consumption. He is afraid that enhancing the duty on native liquor has already caused many of the poorer classes, especially byragees and faquirs, to resort to ganja (the use of which, he is convinced, is very prejudicial to a man's general health) as a cheaper stimulant.

Mr. Carnegie has no means of judging whether the consumption of these drugs promotes insanity or not; but he thinks that, as in the case of spirits, bad effects only follow the abuse, and not the use in moderation, of these articles, and it is certain that there are many cases in which their administration is actually beneficial.

It must be borne in mind that in Oudh the consumption of these drugs is nothing to what it used to be under native rule, when their cultivation and preparation were, it may be said, unrestricted.

The prices now demanded under the excise system have turned what was formerly almost valueless into a luxury.

It does not appear to Commissioner that further restrictive action on the part of Government is at present called for. In his view all that is required is so to regulate the duty on these articles, with reference to the price of spirits, that the poorer classes shall not be compelled to give up the latter stimulant for the former, since there can, he presumes, be no question that the use or the abuse of liquor is less dangerous than the use or abuse of drugs.

Officiating Commissioner submits extracts from the reports of Deputy Commissioners, District Superintendents, and Civil Surgeons on the subject.

Sitapur, No. 293, dated 26th January 1872.

Deputy Commissioner states that :—

"many people believe that intoxication caused by preparations of the Indian hemp plant leads to the commission of violent crimes, and that a long-continued abuse of it has a tendency to produce insanity. I do not believe that the abuse of these drugs is a bit worse than the abuse of spirituous liquors. But at present very little appears to be known about the effects of the use of these drugs. Managers of lunatic asylums have the best opportunities of inquiring on the subject. Until more information is obtained on the subject, I do not think any steps should be taken to limit or prohibit the cultivation of the hemp plant, unless at the same time the manufacture of spirituous liquor is also prohibited."

Sitapur Deputy Commissioner's opinion.

The District Superintendent of Police (Mr. Prince) states that :—

"as far as my experience as a police officer goes, I have always found that the abuse of the above-mentioned drugs has a most deleterious effect on the nerves and brains of the person subject to its *habitual use*. That the abuse of ganja produces temporary insanity no one will doubt who notices the insane

District Superintendent's opinion.

insane

insane appearance of the person under its influence and watches his insane actions, the latter unlike the effects of opium always taking the violent maniac type, and that the *continued* and *habitual* abuse of this destructive drug must in longer or shorter time produce confirmed and chronic insanity, is reasonable to suppose, but experience also teaches that such is the case. The sad cases you meet among the Hindu caste of byragees are all the effects of excess in smoking of ganja, charas and drinking of bhang."

The Civil Surgeon states that :—

"my experience in the observation and treatment of the effects produced by preparation of Indian hemp has been so limited that any remarks of mine can be of but small value. I have not had in a period of five years over a dozen cases under treatment. In all, with one exception, recovery from derangement produced by the drug took place from three to eight days, and so far as I could ascertain, it appeared to have been permanent. The exception was in the case of a man aged about 22 years. He suffered, within a space of two years, on four different occasions, after a debauch from violent delirium, hallucinations of the senses and homicidal tendencies. On the last occasion recovery took place partially, and for a short period the affection ultimately merged into a form of homicidal mania. In this man's family there was no hereditary taint of insanity, and it did not appear that he indulged in any other form of intemperance."

"I am aware a belief exists with many natives to the effect that long-continued and excessive use of the drug has a tendency to produce insanity ; but then I have never found that they attributed to other forms of intemperance any influence in the production of the insanity, and it appears to be the case that the majority of those who use the drug are also addicted to other forms of intemperance. In three epileptics I observed abstinence from the drug was followed by improvement, its use caused a more frequent recurrence of seizures, and they lasted longer."

The Deputy Commissioner of Hardui says :

"I have failed to elicit any reliable information from the magistrates in this district on the subject of the effects produced by the abuse of ganja, and I have little or no personal knowledge of the matter."

"A few months ago a man was brought in by the police as insane and was so treated for three or four days when he recovered, and it was ascertained that his temporary loss of reason was caused by, I suppose, an immoderate consumption of bhang."

"The Civil Surgeon, in a letter to the Sanitary Commissioner, No. 249, dated 14th November 1871, reported that ganja, bhang and charas were extensively used by the people of this district."

"The Thakoors used the drug in moderation and the Mahomedans in excess. If the habit of smoking ganja is contracted early in life, the sudden withdrawal of the drug induced, the civil surgeon observed, symptoms of incipient insanity, and he expressed a belief that the majority of the cases of insanity which came under observation are due to the abuse of Indian hemp."

"This officer has been in this district some years. The subject is especially within his province."

"The stray cases that may fall under a magistrate's observation cannot, for want of scientific investigation, afford very valuable material for a confident opinion."

"Natives generally seem not to have noticed any evil permanent effect from the abuse of these drugs."

"If I can venture to give an opinion, I should say that the habitual use of any drug of so dangerous a character that, if used immoderately, it produces temporary insanity, must have a deleterious influence on the brain, ending with permanent loss of reason."

"I do not think that the use or abuse of ganja or bhang has any perceptible influence in exciting to violent crimes. The causes of violent crimes are ascertainable, and among them, except perhaps in extremely rare and exceptionable instances, the influence of these drugs cannot be discovered."

"The criminal classes, simply because they belong to an evil, unlawful, and degraded class of society, indulge the most in these as well as in other noxious practices."

"Restricting the use, then, of ganja and the other preparations of hemp would, I believe, have no perceptible effect in diminishing crime otherwise than by improving the moral disposition of the portion of the criminal classes that indulge in their use. Indirect and little as such an effect may be, its importance should not be underrated."

"If practicable, I think it would be better to prohibit the cultivation of the plant than to enhance the duty upon consumption. Under both methods there would be the same effort to cultivate illicitly ; and as there seems to be no beneficial uses for this plant and its preparations, there can be no good grounds for allowing it to be cultivated at all."

"I have consulted the officers indicated in your docket relative to the effect of the habitual use or abuse of ganja, and their opinions are briefly as follows :—

"The Civil Surgeon says he has seen two or three cases of temporary insanity, believed by himself to have been caused by the abuse of bhang or ganja, though in each case the fact was denied by the patient, who in every instance got better in a few days."

“The District Superintendent of Police offers his opinion that the use or abuse of ganja does not produce insanity or other dangerous effects, such as the committal of serious criminal offences, grounded on the result of his inquiry that none of the persons who have been sent up during the past year as insane used ganja at all, and only a very small minority of the offenders in serious criminal cases were reported to have been accustomed to use ganja occasionally. All thanadars and inspectors in the district are unanimous in their reports on the subject.

“The Extra Assistant Commissioner would advocate the reduction rather than the enhancement of the duty on these substances, as the latter would have the effect of increasing the offences of smuggling the product of the wild plant, or drive consumers to resort to the use of dhatura seed, which is worse in its effects than ganja.

Deputy Commissioner. “I have nothing to add of my own experience.”

In his own Court Commissioner has seen more than one instance in which the criminal pleaded, in excuse or explanation of violence or murder, that the crime was committed when under the influence of bhang; and there is in his mind no doubt that the use of the drug operates much as intoxicating liquors do in England, by stimulating the passions and weakening the power of self-control.

In this way a crime is often committed under the influence of bhang which, without it would not be committed at all; because when the reason is disordered by the drug, the temptation to the crime becomes stronger, the failing courage receives an artificial support, the prospect of punishment becomes dim or fades out of sight altogether, and the moral powers of resistance and self-control are enfeebled or lost. But further than this, so far as Commissioner's experience goes, the use of intoxicating drugs does not create insanity, temporary or permanent.

He would not advocate an increased duty upon the drugs now in use because the consumers will certainly be driven by the scarcity to use as substitutes drugs of, if possible, still more poisonous properties.

Already the high duty has induced the people in some instances to use the dhatura in place of bhang, and bad as the latter is, the substitute is infinitely worse.

Sanitary Commissioner states that he has asked for the opinions of all the health officers of the province on the subject. Many of them simply state that no cases of insanity produced by the preparations of Indian hemp have been observed by them.

Dr. Bonavia says that he has ascertained that a very large proportion of the people of Lucknow drink bhang at least once a day, more especially in the winter, but he has not been able to trace any case of insanity to the abuse of bhang, ganja or charas.

The Health Officer of Gonda states that the inhabitants of the northern parts of the district indulge much in the use of ganja and bhang, but he has not been able to find that the abuse of the preparations of Indian hemp causes insanity. An employé of the Bulram-pore Maharaja said that he did not know of any instances in which such a result followed.

Dr. A. Cameron, health officer, has had insane persons under his care who were addicted to excessive ganja-smoking, and he finds mention several times in records of lunatic cases kept by his predecessors of the patients having been ganja-smokers. He adds—

“I am not aware that the connexion has ever been thoroughly and satisfactorily established in any of these cases, but I have more than once discharged such cases cured after only a short detention during which they were deprived of the drug.”

In the Lucknow Lunatic Asylum persons said to be addicted to the abuse of the preparations of Indian hemp are often admitted, and cases similar to those referred to by Dr. A. Cameron are not uncommon there.

Indian hemp produces a peculiarly exhilarating form of intoxication, which often induces people while under the influence of it, especially beginners, to behave in the most extravagant manner.

It is probable that persons whose minds are unsound already may occasionally, after indulging in ganja or bhang to excess, manifest symptoms of insanity which

which make it necessary to put them under restraint till the effects have gone off.

In Sanitary Commissioner's opinion, ganja, bhang, and charas no more produce insanity than alcohol does, and as an intoxicating drug Indian hemp would appear to do less harm to the constitution.

Dr. Chevers, in his "Medical Jurisprudence," mentions that he has never been able to perceive any ill effect from sudden discontinuance of the habit of ganja-smoking, such as the delirium tremens which is liable to attack an habitual drunkard deprived of his alcohol, and this observation is confirmed by the experience of others.

No. 681, dated 20th February. Commissioner, Faizabad, submits abstract of reports from Deputy Commissioners.

Deputy Commissioner, Faizabad, merely forwards copies of Civil Surgeon's and District Superintendent's replies, and states that he has no personal knowledge of the effects of the use or abuse of ganja.

Deputy Commissioner, Baraich, states that from inquiries he has made, and from a report from the District Superintendent, it is evident that abuse of ganja does not produce insanity; and quotes from Mr. Smith's report as follows:—

"Considering the large number of persons there are who smoke ganja, the doing so has not had a bad effect upon them as any other drug. I have not discovered one instance of madness brought on by smoking ganja; not a single person who is now insane in this district, and about whom inquiries have been made, appears to have become insane from smoking ganja; nor can I discover that of the insane persons there are any whose fathers were great ganja-smokers. The opinion of all natives is that ganja alone does not bring on insanity."

The Officiating Deputy Commissioner states that the replies by natives to questions asked them on the subject of the supposed pernicious effect of ganja and bhang are exceedingly vague and contradictory.

The whole question appears to be one of degree. Ganja smoked immoderately is admittedly bad; smoked in moderation it has no evil effect. It is alleged by some persons that abuse of these drugs tends to destroy virility. But no evidence or instance has ever been adduced by those who have been questioned in support of their vague assertions. Bhang, in the green state, is undoubtedly useful for cattle on account of its stimulating and nerving qualities.

Commissioner promises further information.

Officiating Inspector General of Police forwards copies of replies from Major Sharpe, Mr. Garstin, Inspector Ram Narain, and Mr. Hannah. He is himself of opinion that the constant and excessive use of ganja would produce insanity in the same way that the constant and excessive use of ardent spirits produces delirium tremens, and eventually madness.

Colonel Barrow believes that a man under the influence of bhang would be more likely to commit a violent crime than one not so influenced; but in the course of his experience as a police officer he can recall but very few cases of violent crime which have been committed under its influence; and his own observation does not lead him to think that the interference of Government is necessary to restrict the consumption of ganja, and the plant is so indigenous that he doubts if any restriction to its cultivation would be of much avail.

Major Sharpe submits the following extract from Deputy Commissioner's report on the same subject, which, he says, will give the substance of what he "must have written":—

"The District Superintendent of Police, Major Sharpe, considers that their effects are as bad, if not worse than those caused by opium, and that any restriction on the sale of ganja would be very beneficial; he cannot say whether criminals apprehended for theft, &c., are generally bhang-takers or not; but all his inspectors and police officers are unanimous in opinion that the prevalence of the disease of 'dumma' or asthma is due to bhang, and he believes it is one of the most deleterious drugs that can be taken."

Reports that during his tour he made careful enquiries as to the alleged influence of ganja and bhang in exciting to violent crime.

Mr. Garstin.

The general opinion appears to be that the intoxicating preparations of hemp rather deaden than excite the senses, though he is of opinion that the effects vary according to different constitutions; for it is well known sometimes to produce a frenzy and violent passion which, however, only lasts for a short time, leaving those who swallow the poisonous drug in a state of languor and imbecility, until a renewal of the dose revives the spirits.

The frequent use of the drug shortens the lives and enfeebles the constitutions of its victims; it apparently serves no good use, and is not, like opium, valuable for medicinal purposes.

He has spoken to and seen a great number of ganja-smokers, who appear alike shattered in mind and body.

Almost all admit that the practice is as useless as it is vicious, some of the poorer classes alleging that it is a preventive to rheumatism and the like, the fact probably being that it deadens the senses to cold or fatigue.

A law absolutely prohibiting the cultivation of the plant would hardly be expedient, though a considerable enhancement of the duty on such preparations as ganja and bhang would result in no inconvenience to anyone and be of great public benefit.

States that in his opinion the offensive smell from smoking ganja and bhang does not produce insanity, for the intoxication caused by them does not last longer than two hours.

Inspector Ram Narain, Officiating District Superintendent of Pratabgarh.

By the word insanity he understands that a person is mad for life or for some years; this, however, bhang and ganja does not produce, and he has not yet heard of such an instance.

States that the constant use of bhang does not seem to leave any very evident marks on the individual constitution, and, judging from the personal appearance of those who use it, does not seem to impair mental or physical development, rather it seems to foster the growth of the body, though this may be dependent largely on the circumstance that those who use it are well-to-do, never suffering from any privation in the matter of food, &c.; they are not exposed to the inroads that the constant use of stimulants makes on both mind and body. In comparison with opium and ardent spirits bhang is innocuous, and its effects are apparently only temporary. In its immediate effects bhang is strongly stimulant, exciting the imagination without influencing the grosser passions, soothing the care-worn and depressed, and enabling individuals to look with complacency upon those circumstances of life which filled their minds with grief and care in their sober moments.

Mr. Hannah, Superintendent Inspector General's Office.

With an ardent, excitable temperament, no doubt the use of bhang would lead to the commission of crime under its excitement; but as a rule the classes who use this drug are not those so endowed by nature, except the Chatris and Thakoors.

The effects of ganja are more destructive even than those of opium and spirits, perhaps partly because the classes who use it are just those who suffer most from the vicissitudes of the weather, the exposure and privations inseparable from their particular callings. The drug is smoked, and its constant use is soon apparent on the body,—the limbs become attenuated, the shoulders and chest drawn forward and inward, and very soon disease of the respiratory organs sets in in some form or other. Chronic asthma being one of these, the mental faculties do not long escape the poison taken directly into the blood through the lungs; the appearance becomes stupid and dogged, the eyes are bloodshot, and the continued use of the drug brings on permanent imbecility, its early use being characterised by stolidity and then going on to an utter inability to comprehend the most simple ideas, the mind being gradually but hopelessly and permanently impaired. Where the drug has been excessively used, instead of moderately and habitually, the body has not had time to receive injury; but the brain and mental powers have been directly



directly and violently disturbed and more or less permanently injured, the effects being either temporary or incurable lunacy. Many of the male occupants of the lunatic asylums are the unfortunate victims of this drug. It is also alleged that the effects of the drug when used immoderately, do not confine themselves to the individual alone, but are also hereditary, exhibiting their presence in idiocy and lunacy.

The use of ganja is immediately to fire the animal passions, and it is therefore no doubt an incentive to violent crime; this, however, must depend largely on the idiosyncracies of the individual and the inducement to such from his condition of life or his particular calling.

Charas, ganja, and bhang are the extract, dried flowers and dried leaves of one and the same plant; the first is expensive, and thus its use is under some restraint; the use of the others is almost uncontrolled, and will be always so on account of the facility of its cultivation, or rather from the plant requiring no cultivation at all. It will grow in any nook or corner out of the reach of observation, and a single plant would supply the wants of a large number of persons. This being the case, no excise law that could practically be worked out would reach or restrain its cultivation short of the entire prohibition of its cultivation (under heavy penalties) by private individuals, and even then there can be no doubt but that it would be still cultivated clandestinely in the many thousand villages of the province.

Officiating Commissioner, Sitapur, sends copies of reports from the district superintendents of Kheri and Sitapur, regarding the criminal lunatics Cheda, Gunga, and Doond, No. 1028, dated 15th March, 1872. who, these officers state, committed the offences with which they were charged while in an unsound state of mind, that the cause of insanity cannot be ascertained, but that they were not in the habit of taking intoxicating drugs, and that their blood relations do not appear to have ever been afflicted with madness.

Mr. Ousley forwards reports from the Deputy Commissioners of his division.

The Deputy Commissioner, Unao, believes that there are no sufficient reasons for supposing that the abuse of ganja *per se* produces insanity.

Mahomed Buksh, a native doctor in the Unao district, states that, during his thirty years' experience, he has never found any person go mad from the mere use of ganja or bhang. Excess of bhang produces a torpid state of the mental powers, and excess of ganja leads to corruption of the blood, irritability of temper, and a peculiar wildness of thought; madness results only when there is a predisposition to it.

The Deputy Commissioner of Barabankee says that he cannot speak from personal knowledge of the effects of ganja on the system, but he believes that the use of ganja and other preparations of the *Cannabis Indica* or *Cannabis Sativa* affects the brain, and keeps a person in a state of unhealthy mental excitement. The native gentlemen consulted by the Deputy Commissioner told him that ganja taken in excess produced insanity.

Dr. Kidd, at Barabankee, believes that the abuse of ganja invariably ends in mania.

The Deputy Commissioner, Lucknow, says that two out of the three criminal lunatics belonging to his district in the lunatic asylum were smokers of ganja.

Commissioner is unable to say from personal observation what the effect of the use of ganja on the system may be, its immoderate use like the use of all stimulants is doubtless excessively hurtful to the mind and the nerves; but he believes that there is much weight in a paragraph of Dr. Cannon's report for last year on the Lucknow Lunatic Asylum. He writes:—

“ I beg to state I am entirely of Dr. Payne's opinion, that the excessive use and abuse of narcotics and stimulants amongst the insane quite as often (and much more frequently) follows some aberration of the mind or depressed state of the nervous system, as that these excesses are the origin of insanity.”

Commissioner, Lucknow, states that of the seven lunatics in the statement which accompanied this office No. 5677, dated 20th No. 1359, dated 3rd May 1872. December, three belonged to the Lucknow district, viz., Nos. 242, 178 and 236, regarding whom the Deputy Commissioner reports



that Ramdar Khan (242) is a violent lunatic, was a vagrant beggar, that he was in the habit of drinking country liquor, and was a smoker of ganja and eater of bhang. He ate little food, only as much as he could get by begging, but drank, smoked and ate bhang to excess.

Thanna (178) described as idiotic from excessive use of spirits. He did not eat opium but drank country liquor and tari (palm juice) and smoked ganja to excess. He ate little, and was habitually intoxicated. In the cold season he became crazy for two-and-a-half months at a time.

Ram Sewuk (236) is reported by the police officer to have been a mad devotee, whose madness was caused by religious excitement, and not by the use of intoxicating drugs.

Chedi, No. 55, was from Pratabgarh, and died on 18th December 1871, and Buldeo, No. 243, came from Hardui.

As regards Heeralal, No. 42, the Deputy Commissioner, Barabankee, states that there was nothing in the proceedings to show that the man had lost his mind from the use of intoxicating drugs.

Commissioner can give no further information than that contained in his No. 950, dated 22nd ultimo, on the subject of the effects resulting from the use of ganja.

In continuation, Commissioner, Lucknow, forwards a report from Kalb Ali Khan, Extra Assistant Commissioner, Unao, stating that Bhowani (No. 1, and last but one on the list) was in the habit of using ganja, bhang and liquor to excess, that he consequently became insane some time ago, and that four days prior to the murder which he committed he indulged in an unusual quantity of ganja, and having lost his senses bit his wife's nose.

The people of his village are of opinion that excessive use of the drug was the cause of Bhowani's insanity.

No. 2081, dated 31st May 1872. Commissioner, Faizabad, embodies the replies of Deputy Commissioners, Gonda and Baraich.

Gonda. Deputy Commissioner submits copy of report from Civil Surgeon, stating that—

"I have made inquiries into the antecedents of the lunatics at present in the Gonda jail.

"The mother and cousin of Sukti Brahman state that he first showed signs of insanity about three months ago, that they found themselves quite unable to control him. On one occasion he set fire to his house; that he had never made use of ganja or bhang, but that he occasionally indulged in tobacco in the form of snuff. The lunatic gives the same account of himself.

"The brother of Jhagrabari states that Jhagra first showed signs of insanity about four months ago, that he never indulged in ganja or bhang, but that he was in the habit of smoking tobacco. The lunatic says that he was in the habit of smoking ganja, and that smoking was his life. The brother is very positive in his statement that Jhagra never did smoke ganja.

"The lunatics have been medically treated to a certain extent, but moral treatment is impossible except in a proper asylum, where it is hoped these men will soon be removed."

The Officiating Deputy Commissioner states that, as the criminal lunatics referred to did not belong to his district, no action was taken, and the papers were consigned to the records. The civil surgeon of Baraich reported that he was not prepared to give an opinion on the subject. The Deputy Commissioner refers to his original report which has already been embodied in Commissioner's No. 681, dated 20th February last.

The Deputy Commissioner, Faizabad, has been urgently takeeded.

Commissioner, in reply to reminder, sends copy of docket from Deputy Commissioner, Faizabad, who states that nothing can be ascertained of the antecedents of Rampershad, who was a vagrant. That Kareemun Shah, although admitted into the asylum in 1867, was not, it is believed, sent from Faizabad as lunatic, for he was sentenced in July 1865, under Section 391, and transferred to the Lucknow jail, where he became insane.

Further report promised. Enquires if further particulars about Runsoor can be given, and states that his residence ascertained, inquiry would be facilitated.

Commissioner,

Commissioner, Faizabad, forwards copy of docket from Deputy Commissioner, Faizabad, who reports that from inquiries made in Kareemun's village, he does not appear to have been addicted to the use of either ganja or bhang, that the only intoxicating substance he was known to be partial to was tari at its proper season, and that the man never displayed any symptom of insanity before his apprehension.

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No. 3069, 53 G., dated 3rd August 1872.

From the Honourable *E. W. Ravenscroft*, Acting Chief Secretary to the Government of Bombay, to the Secretary to the Government of India, Department of Agriculture, Revenue and Commerce.

I am directed by the Honourable the Governor in Council to acknowledge the receipt of your letter No. 339, dated 10th October last, relative to the effects of the use and abuse of the several preparations of hemp and the alleged influence of bhang and ganja in inciting to violent crime and insanity. In reply, I am directed to forward to you the papers noted in the margin, containing the opinions of the several officers who have been consulted on the subject, and to state that, in the opinion of this Government, the restrictions which at present exist upon the sale of bhang and ganja should be preserved, and that they should be treated as other intoxicating drugs or spirits, and be made subject to a duty, but there appears no occasion, so far as this Presidency is concerned, to take measures for the limitation or prohibition of the cultivation of the hemp plant.

Letter from the Health Officer for the city of Bombay, in charge of the office of Municipal Commissioner, No. 5595, dated the 28th November 1871.

Letter from the Commissioner in Sind, No. 1941, dated the 28th December 1871, with enclosure.

Letter from the Commissioner of Customs, No. 108, dated the 11th January 1872.

Letter from the Police Commissioner, S.D., No. 718, dated the 10th February 1872, with enclosures.

Letter from the Inspector General, Indian Medical Department, No. 527, dated the 12th February 1872.

Letter from the Police Commissioner, N.D., No. 959, dated the 19th February 1872.

Memorandum from the Commissioner in Sind, No. 207, dated the 17th February 1872, with enclosures.

Summary of replies of judicial and police officers.

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No. 5595, dated 28th November 1871.

From *T. G. Hewlett*, Esq., Health Officer, in charge of Office of Municipal Commissioner, Bombay, to the Chief Secretary to the Government of Bombay.

I had the honour to receive Government Resolution No. 3118 of 1871 (General Department), and in accordance with the terms thereof, beg to state that I have examined the mortuary tables for the last 10 years and do not find any death within that period ascribed to the use of ganja or bhang. This result is further confirmed by searching the records in the coroner's office, as no inquest has been held in that time, or any person alleged to have been poisoned by either one or the other preparation.

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No. 1941, dated 28th December 1871.

From Colonel Sir *W. L. Mereweather*, K.C.S.I., C.B., Commissioner in Sind, to His Excellency the Governor and President in Council, Bombay.

With reference to Government Resolutions Nos. 3118, dated the 27th October 1871, in the General Department, and 4464 of 11th November 1871, and to the Memorandum No. 5020 of the 14th instant, Judicial Department, calling for an early reply to the same, I have the honour to state that I have not yet received answers from all the officers whom I thought it desirable to consult, but I append a précis of those replies which have been received, from which it will be seen that excepting Dr. McRury, who has been in Sind but a short time, there is a general unanimity of opinion that the use of bhang, ganja, or opium in this province

is not productive of violent crime or of insanity. I entertain the same opinion, and do not consider that there is any sufficient ground for restricting the use of the hemp plant, or of limiting its cultivation.

2. A précis of further replies which may be received by me on this subject will be submitted to Government.

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*Précis.*

Reports that ganja and bhang are not much used in his district, and indulgence in them has never produced any dangerous effects so far as he has noticed.  
Political Superintendent, Thur and Parkur, dated 9th November 1871—Major Tyrwhitt.

States that bhang is most extensively used by the people of Sind; but the decoction which is drunk is not much more hurtful than beer. That ganja is smoked in a hookah, but the use of it is not general. Does not consider that the use of the preparations of hemp tends to insanity or the commission of violent crime, although a man bent on the commission of a violent crime may occasionally stimulate his courage by an overdose of bhang.  
District Superintendent of Police, Kurra- chee, dated 13th November 1871—Colonel Marston.

States that in and about Hyderabad ganja is but little used, but bhang and charas are largely consumed both by Mussulmans and Hindus, but more so by the former, and that many women resort to bhang, especially prostitutes. From inquiries made by him, it appears that these drugs alone rarely incite to crime or cause insanity. They rather cause powerlessness and cowardice. Hard drinkers of bhang, however, add to the beverage dhatura, and then imbecility will in course of time occur. Is against any increase of duty or prohibition to cultivate the drugs, the population being so poor and steeped in hunger and nakedness that the drugs are almost a necessity of life.  
Superintendent of Jail, Hyderabad, dated 23rd November 1871—Dr. Holmsted.

Is of opinion that violent crimes in Sind are most frequently the result of jealousy and cannot be attributed to the use of stupefying drugs.  
Superintendent of Jail, Kurrachee, Dr. Hopkins, 30th November 1871.

Reports that he has never found by experience that in Sind the abuse of ganja or bhang has had any influence in exciting persons to the commission of violent crime, and that in his opinion a moderate use of the drugs is the reverse of hurtful to the poorer classes, who are often indifferently fed and clothed.  
District Superintendent of Police, Hyderabad, 1st October 1871—Captain Crawford.

States that the inhabitants of Upper Sind are addicted to the abuse of the several preparations of Indian hemp, and that in his opinion prohibitory measures should be adopted. Considers the abuse of bhang and ganja injurious to the body and has a tendency to induce mental unsoundness or excite to violent crime.  
Superintendent of Jail, Shikarpur, 9th December 1871—Doctor McRury.

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No. 108, dated 11th January 1872.

From *L. Reid*, Esq., Commissioner of Customs, Bombay, to the Chief Secretary to the Government of Bombay.

I HAVE the honor to acknowledge the receipt of Government Resolution No. 3118 of the 27th October last, forwarding copy of Government of India's letter No. 339 of the 10th idem for consideration and report in regard to the effects of the use or abuse of the several preparations of hemp.

2. In reply, I have to state, for the information of Government, that the manufacture and retail sale of ganja is regulated under a license system, which in the mofussil is administered by the District Revenue Officers under Section 10 of Act III. of 1852, and in the town of Bombay itself by this Department under Act XXXIV. of 1857.

3. In this Presidency ganja, otherwise called bhang, is used as a drug in smoking mixed with tobacco. There are other preparations made of this drug called "majum" and "subjee." The former is made in cakes by mixing various kinds of spices therewith, and is used as intoxicating confectionery, while the latter is a liquid preparation, supposed to have cooling effects and used as an agreeable beverage.

4. This

4. This drug, when smoked, or its preparations eaten or drunk in excess, has an intoxicating effect, and its influence no doubt is capable of exciting to violent crimes like other intoxicating preparations taken in excess; but in my personal experience, cases are very rare in which the abuse of the drug has tended to serious results.

5. In this Presidency the ganja appears to be chiefly used by "gossavees," "faquirs" and other mendicants, generally of a low class.

6. In my opinion, there seems no necessity for having further restrictions imposed on the use of ganja than those which now exist.

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No. 718, dated 10th February 1872.

From *W. H. Havelock*, Esq., Police Commissioner, Southern Division, Bombay, to the Chief Secretary to the Government of Bombay, General Department.

WITH reference to the Government Resolution, No. 3118, dated 27th October 1871, I have the honour to state that, having received a similar call for a report from the Secretary to Government in the Judicial Department, I submitted, after consulting the District Superintendents of Police in the Southern Division, the result of my inquiries as to the use and abuse of the several preparations of hemp in a letter to Government in that Department, No. 171, dated 27th January 1872, copy of which and of its enclosure I beg to append to this letter.

2. The reports of the Collectors, Southern Division, to whom also a reference was made on the subject consequent on receipt of the Government Resolutions cited at the beginning of paragraph 1 above, do not afford any additional information to that already reported by me, and in fact, are generally of the same purport as the reports of the District Superintendents of Police. Copy of a memorandum from the Hoozur Deputy Collector of Rutnagerry, forwarded by the Collector of that district, as containing a recital of some instances in which the ill effects resulting from the abuse of ganja have come under the personal observation of Mr. R. N. Dugla, is, however, appended for the information of Government.

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No. 171, dated 27th January 1872.

From *W. H. Havelock*, Esq., Police Commissioner, Southern Division, Bombay, to the Acting Secretary to the Government of Bombay, Judicial Department.

I HAVE the honour to reply to the Government Resolution, No. 4464, dated the 11th November 1871, calling for a report on the subject of the effect of the use and abuse of the several preparations of hemp, and the effect of ganja and bhang in exciting to the commission of violent crime.

I deemed it desirable in the first place to obtain the opinions of the local officers, and the following is the substance of the reports received by me up to date.

3. Captain Daniell, District Superintendent of Police, Ahmednuggur, cannot call to mind any cases of violent crime committed by any person under the influence of ganja or bhang. He has consulted his most experienced officers with the same result, and he adds his opinion that no measures for restricting or prohibiting the production or use of ganja or bhang are required in the Ahmednuggur District.

4. The District Superintendent of Police, Canara, Captain Wise, has not himself known of any man who, having indulged freely in ganja, has afterwards become mad, as he has not had the opportunity of making such observations, but, frequently, when making inquiries about madmen who have come under his notice as to the cause of insanity, he has received the answer that "he formerly took much ganja." This, Captain Wise remarks, is a very common answer, and natives consider it quite sufficient to explain the cause of madness; ganja

and bhang are, however, not much used in the Canara district. In the larger towns, from information obtained, he considers the average number of consumers of these drugs to be about 10 per cent. of the population. During Captain Wise's experience in the Police, he has not found that the regular consumers of ganja and bhang are given to committing violent crime. Men generally take these drugs until they are in a half stupid state, and not to excite themselves. He is aware that a man who has committed a violent act, run amuck, &c., is always said to be under the influence of bhang, and this may be the case, but Captain Wise doubts very much if such a man is one who is always in the habit of taking it, and rather thinks that in such a case it is the first occasion of his ever having been under its influence. Captain Wise is finally of opinion that the regular ganja or bhang consumer is a timid, harmless and very useless individual, who is ever in a half-stupid state.

5. Colonel Thomas, District Superintendent of Police, Belgaum, reports that the principal preparations of hemp are bhang and ganja. The latter is always smoked but never taken. Bhang eaten with water is called punniah, ghota or subjā, and, taken with milk, it is called doodya. It is also eaten in the form of bojya, a mixture of poppy seeds, bhang and other articles pounded. All produce a form of intoxication or temporary insanity, bojya having the greatest effect, but not to such an extent as to excite a man to crime, except when taken in excessive quantity. But, Colonel Thomas adds, this very seldom happens; and as regards the Belgaum district, he does not think there is any necessity for making any change by legislation in the existing system of cultivation of the plant or its use.

6. The Acting District Superintendent of Police, Poona, Captain Daniell, states that no crimes of violence are on record as known to have been committed in this district by persons under the influence of ganja or bhang. His own police experience, and that of his subordinate officers, lead him to the conclusion that no restriction is called for, as regards the Poona district, in the use of the various preparations of hemp.

7. Lieutenant Hay, Acting District Superintendent of Police, Sholapoor, states that the use and abuse of ganja and bhang are not very prevalent in this district, and that the commission of violent crime under the influence of those drugs is of rare occurrence.

8. Major Johnstone, District Superintendent of Police, Rutnagerry, reports from inquiry made that it does not appear that any crime has been committed in this district under the influence of ganja and bhang.

9. Mr. Jones, Acting Superintendent of Police, Kulladghee, reports that from inquiries it appears that ganja is not much consumed in this district. The intoxicants most in use here are toddy and coarse country tobacco. The former, he adds, very often leads to bazaar rows among the consumers; and persons who smoke the latter frequently acquire a permanently 'fuddled' look and become weakened both in health and intellect; but he thinks the mischief ends there. Mr. Jones remarks that, so far as ganja is in use, its effects are the same here as everywhere. It is a fruitful source of insanity, owing, he supposes, to the violent stimulus it exerts upon the brain. Its effects appear to be, firstly, an active excitement of the entire nervous system, during which period, which is not, however, a long duration, any tendency to commit crime would be likely to gratify itself; and, secondly, a sedative effect. Both these effects are, Mr. Jones imagines, agreeable; but as with all stimulants, the after-effects are marked by extreme depression. This leads to a repetition of the dose and the circle completes itself. Hence he concludes that the use of the drug begun, it almost enforces its own continuance, and it assuredly cannot be persevered in without very bad mental and physical results as likely as not to lead to insanity or crime. On the other hand, ganja or Indian hemp possesses many valuable medical properties. European doctors seem to regard it chiefly as a cheap anodyne, useful in neuralgia and nervous affections, but rather apt to be uncertain in its results. The Indian hakeems, however, use it freely in cholera, dyspepsia, dysentery, impotency, and as a nervous stimulant generally, though in view of its powerful narcotic after-effects, the remedy in some of these cases seems rather two-edged. All Mr. Jones has consulted, however, agree that it  
would

would be a good plan to enhance the duty upon its consumption, as while yet leaving it cheap enough for all medical purposes, it would greatly tend to lessen its consumption as a mere animal stimulant.

10. From the inquiries of the Acting District Superintendent of Police, Sattara, Major Coles, it appears that no crime has been committed in this district under the influence of bhang or ganja during the last five years. Ganja is said to be produced in only one taluka, and about 10 per cent. of the inhabitants of the Sattara district make use of the drug.

11. It will thus be seen that the general local opinion is that the use of ganja or bhang, though in rare cases it may, by abuse, cause insanity, has not been productive of violent crime, and that the effects of these drugs, moderately used, are considered to be generally harmless, though stupefying in character.

12. I append a copy of an opinion given by Dr. Carter, Civil Surgeon, Sattara, on the subject, which will be found interesting.

13. The report of the District Superintendent of Police, Dharwar, has not yet been received, but it seems unnecessary to await it.

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*P.S.*—Since this report was drafted the reply of the District Superintendent of Police, Dharwar, has been received. Captain Bartholomew's opinion confirms that of the generality of officers consulted. He summarises results as follows:—"The effect of the drug is stupefying and not exciting, and deprives men of all wish for active movement. It is not therefore likely to excite men to violent crime, and it is denied that it does so."

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Dated 5 December 1871.

Memorandum by *H. Carter, Esq., M.D.,* Civil Surgeon, Sattara, on effects of Hemp.

The preparations used are ganja (dried tops) for smoking, and bhang (dried capsules and seeds, &c.) also used in preparing drinks. Charas (resinous matter from the plant) is seldom employed in the Deccan.

2. In the city of Sattara the only licensed dealer estimates his monthly sales at the value of Rs. 100, in addition to which Rs. 15 worth is sold in the adjoining sudder bazar. The price is 2½ lb. per rupee, which would give 40,000 doses of ganja for smoking in Sattara town per month, supposing ¼ tola were used each time.

3. All classes of the community make use of hemp, and all castes of Hindus, from the Brahmin downwards, but it is chiefly foreigners, as *purdesis*, and religious mendicants, as bairagis, gossavees, and Mussulman faquirs, who largely indulge, the first-named from custom, the latter from habit, and, it is asserted, for aid in assuming a state of ecstasy. Hemp-smoking appears to be resorted to as a soothing pleasure by strangers from home, by wanderers and the non-domesticated, and by those exposed to inclemencies.

4. The ordinary effects of hemp-smoking are reported to be mildly stimulant and subsequently narcotic. The practice in short corresponds to the combined tobacco-smoking and spirit-drinking indulged in elsewhere, and in general it may be said to be at least no more directly injurious to the body; probably hemp-smoking is less hurtful to the mind. Indulgers in hemp also prefer company, smoking together.

5. A physiological effect is said to be increase of appetite, especially for milk, sugar and ghee, and when the craving for such food, as well as for animal flesh, as mutton, can be satisfied, the frame does not undergo emaciation. The sexual faculties are not greatly affected.

6. Hemp may be taken in the form of a drink, and it is also eaten as a sort of sweetmeat, and then is said to produce more violent effects, such as mania; when smoked, garrulousness, noisiness, the use of abusive terms are the worst effects that commonly arise.

7. A form of insanity, may, however, ensue; thus, during the past year, a young Maratha policeman contracted the habit of hemp-smoking during the wet and cold season at the hills, and in three months began to show signs of mental imbecility, such as torpor, speechlessness, habits of straying, &c., which persisted for about four months, and have not returned since the habits were broken. I have known suicide to follow this indulgence. It is very seldom indeed that convicted prisoners are found to owe their crime to the use of this drug, and the evidence that acts of violence are similarly attributable is of the scantiest.

8. As strictly medical effects may be mentioned derangements of the circulation and respiration. I have known a strong man die in a few hours of acute bronchitis, when the more obvious cause of this complaint was this habit of hemp-smoking, and I am informed that this consequence is not very uncommon, as well as asthma in the aged. The nervous system is doubtless implicated.

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No. 149, dated 4 December 1871.

Memorandum by *R. A. Dugle*, Esq., Deputy Collector, Ratnagiri.

Forwarded to the District Superintendent of Police.

2. Independently of the use of bhang and ganja for medicinal purposes, they are used or abused to a large extent as articles of luxury; gossavees and byragis among the Hindus, and faquirs among the Mahomedans, persons who are alleged to have left all worldly concern and who go about visiting places of pilgrimage and subsist by begging, use it openly. Many private persons are known to use it, but secretly.

3. Long and constant use of these articles has produced most injurious effects upon the human system. Delirium and its attendants, self-talking, too much talking, and violent behaviour towards comrades, are the ordinary effects, and I have known instances at Nassick in which a young man, aged about 20, became a harmful insane, and was sent to the lunatic asylum at Puna, where he died, and two others, aged about 30 and 25 respectively, committed suicide by drowning themselves in the river Godavery. Long before death they had left off using these drugs which they imagined produced no intoxication, but the previous use, or rather abuse, had so far deranged their system and brains, that they were inwardly extremely troubled, and life to them became loathsome. Such instances, however, are very rare, and it does not appear to be necessary to adopt any restrictive measures beyond those now in force.

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No. 527, dated 12 February 1872.

From *A. Wright*, Esq., Inspector General, Indian Medical Department, Bombay, to the Secretary to the Government of Bombay, General Department.

With reference to Government Resolution No. 3118, dated 27 October 1871, on the subject of the effects of the use or abuse of the several preparations of Indian hemp, I have the honour to report as follow:—

1. Enquiries have been made from officers in charge of lunatic asylums and civil hospitals throughout the Presidency, and the information supplied is almost entirely the result of an examination of the records of these institutions and not of the personal experience of officers from cases examined and noted by themselves.

2. The officers in charge of lunatic asylums are unanimous in opinion as to the injurious influence of the several preparations of hemp, in producing insanity and exciting to violent crime.

3. Dr. Shepherd, Superintendent of the Colaba Asylum, states that during the past eight years 629 patients have been admitted, and of these 70 or 11·12 per cent. are cases which are recorded as resulting from the use and abuse of the different preparations of *Cannabis Indica*.



4. This opinion is shared by some civil surgeons of great experience, notably by Dr. Wyllie, of Ahmedabad, who states that out of 90 insanes examined on the 1st of April last, 18 are known to have habitually indulged in this drug.

5. But this opinion is not universal.

6. Dr. Sylvester, 1st Physician, Jamsetjee Jjeebhoy Hospital, reports, after examining the records of 16 cases, that the use or abuse of hemp does not, in his opinion, excite to the committal of crime or produce insanity, but rather leads to feebleness of intellect, emaciation, and tuberculosis.

7. Dr. Carter, Civil Surgeon, Sattara, to whom I am indebted for a thoughtful memorandum on the subject, says all classes of the community make use of hemp, and all castes of Hindus, and the practice corresponds to the combined tobacco-smoking and spirit-drinking indulged in elsewhere, and in general it may be said to be at least no more directly injurious. He adds that a form of insanity may, however, ensue, and relates a case in point, and he has also known suicide to follow the indulgence.

8. I think the weight of testimony is in favour of the view that the common and continued use of the several preparations of hemp is decidedly injurious.

9. But I am of opinion that there is not sufficient evidence of a direct kind, being the result of carefully recorded facts, to enable me to state with precision that the effects of this drug are so conspicuously and generally injurious as to warrant exceptional legislative action on the part of the Government.

10. One fact, I would add in conclusion, has come out very clearly from the enquiry into this subject, which is, that the people who indulge most in this drug, and who suffer most from the indulgence, are generally very poor "faquirs," or religious mendicants, so called, and people without a fixed home, or any ostensible means of earning a decent maintenance.

No. 959, dated 19 February 1872.

From *A. Rogers, Esq.*, Revenue Commissioner, Northern Division, Bombay, to the Chief Secretary to the Government of Bombay.

I have the honour to acknowledge the receipt of Government Resolution No. 3118, dated 27 October, 1871. I have consulted the magistrates and the superintendents of police, and there is a general unanimity of opinion that in their experience the use of ganja and bhang does not excite to violent crime. One or two officers report that cases have occurred in which bhang has been administered chiefly in the form of sweetmeats to travellers who have afterwards been robbed, but the use of dhatura for this purpose is much more common.

2. Ganja is the prepared pulp of the buds of the plant and is mixed with tobacco for smoking. Bhang is the prepared leaves which grow just under the bud, and is mixed with sweetmeats or drunk with sugar and water. This is principally used by gossavees, bairagis, faquirs, to dull the pain of exposure and starvation, and is moderately used by Brahmins and prostitutes, and almost all other castes to induce a pleasant languor and stupor. A confirmed smoker does not usually exceed three chilums a day. Prolonged and excessive indulgence in the drug is said to induce a mild form of insanity, and casual indulgence to produce intoxication, but not of such a kind as would excite to crime, though it is remarked by Dr. Bainbridge, of Dhulia, that in persons addicted to the drug there has appeared to be a marked perversion of the moral faculties.

No. 207, dated 17 February, 1872.

Memo. by Colonel Sir *W. L. Mereweather*, K.C.S.I., C.B., Commissioner in Sind.

The Commissioner in Sind has the honour to submit, for the information of Government, a further précis of the opinions of several officers in the province, in continuation of his letter No. 1941, dated 28th December, 1871, on the subject of the use of ganja or opium, and its effects in causing the commission of violent crime, or insanity.



*Further précis of opinion submitted on the effects of the use or abuse of the several preparations of hemp.*

Forwards opinions on the subject from Mr. James, Deputy Collector, Schwan, Lieut.-Colonel Lambert, Collector of Kurrachee, and has nothing to add to them. Similar reports from the deputy collectors of Jerruck and Shahbunder, Mr. Tyndall and Lieutenant Mayhew, give no further information, and are not therefore forwarded. Mr. James states that hemp is used in four forms,—bhang, charas, ganja and majum; bhang consists of the dry leaves mixed with water to suit the taste of the drinker; a very small quantity suffices to infuse several gallons of water; ganja consists of the flowering tops of the plants, which are dried and smoked like tobacco; majum is made of dried leaves, which are soaked in ghee and water; they are then boiled till the water evaporates, and the sediment being strained, is mixed with different substances and formed into a sweetmeat. It is very strong, a tola's weight being the largest quantity that could possibly be eaten at a time. It is considered very aphrodisiac by the natives.

States from careful inquiries made that the effects of the drug are not very injurious; certainly they are in no way to be compared with those of opium; the chief disadvantage arising from much consumption is that the man loses all nerve, not his wits, and in bad cases men become less sharp than before. It is very useful as a medicine, when stimulants are required, and mixed with certain drugs acts as a purgative. It is believed that sudden and enforced cessation from the use of the drug is followed by a severe attack of dysentery. Does not know that bhang incites to crime; persons using it commit crimes like other people, and probably sometimes commit them under the influence of the drug; the action of it is, however, as far as can be learnt, the reverse of what it is generally supposed to be; it deters men rather than stimulates them to commit acts of violence. Consumers of bhang have the same craving for it as those who drink brandy or take opium, absinthium, or similar substances; the craving, however, is not so great as that of the opium-eater, who sometimes dies for want of the drug. If Government wished to raise an increased revenue from it the price should be raised by taxing cultivation. At present the farming of the right to sell it in the chief towns, where the sale is alone permitted, is the only way in which Government get any revenue from it. If the present system were continued, and the cultivator who sows the crop made to pay heavily for a license to do so, the revenue would be much increased; if judiciously done, the consumption would not diminish much. Thinks that a duty, Rs. 5 per maund, which would increase the price by one-half, would be sufficient. Does not advocate restrictive measures against consumption of the drug, it being, perhaps, the most harmless of its class, and if consumers were deprived of it, they might take to liquor or opium.

The Collector of Hyderabad is of opinion that the use of bhang or opium in Sind does not excite to commission of violent crimes, or that special legislation is necessary to restrict the use or retail sale of these drugs; and forwards the opinion of the Deputy Collector of the Tanda, who states that bhang is used in the preparation of an intoxicating drink, and from ganja a substance is made for smoking in a hooka; the effect of neither is exciting, but soothing and stupefying. Has not heard of the commission of any crimes by a person under the influence of bhang or ganja, and no case has ever come before him judicially; restrictive measures against production and use are therefore unnecessary; the use of them is injurious to health only, and very debilitating, but is harmless in regard to the peace of communities.

The Collector of Shikarpur states that bhang, in the form chiefly used, appears to be as harmless in moderate quantities as malt-liquor, and when taken in excess, not more hurtful than spirits. Ganja and charas are used more by purdasis, than by natives of Sind, and always with a view to intoxication. States that the divisional magistrates do not regard the use of bhang in particular as producing insanity, or the

or the cause of violent crime; but an habitual drinker of bhang, when deprived of his potation, is believed to be irritable.

The Political Superintendent, Upper Sind Frontier, forwards, without comment, the opinion of the deputy collector in the Frontier, who states that the use of ganja and bhang does not generally produce insanity; but in cases of abuse, partial insanity has been known to follow; has no doubt, however, that charas, ganja, and bhang have ruinous effects on the constitution by free use or abuse. Charas is commonly smoked in Hindustan, and both charas and ganja are preparations from bhang, which is greatly used as a drink in Sind; those who drink bhang in large quantities, have a thin, meagre appearance, with hollow eyes and cheeks. Smoking charas and ganja is said to produce violent cough, and eventually brings on consumption.

The Deputy Inspector General of Hospitals, after consulting the several medical officers in the Province, states that the records of the Lunatic Asylum do not afford any assistance on the point, whether the use of any preparations of hemp leads to insanity. The sub-assistant surgeon in charge of the Lunatic Asylum states that bhang, when taken alone,

does not, saving in exceptional cases, produce mental derangement; he has known hundreds of natives consuming large quantities of this preparation morning and evening, and continuing this practice for years, but none of them, so far as he could learn, ever became insane in consequence; but bhang when mixed with dhatura to enhance its narcotic properties and taken habitually, does certainly lead to mental disorder. Again, mental aberration is a frequent occurrence among those who have recourse to both bhang and opium. Ganja is chiefly smoked like tobacco, and from inquiries it appears that this preparation of hemp is not, particularly in the Hyderabad Collectorate, employed nearly so often as are the others, *i.e.*, bhang, charas, and majum. The class of people who chiefly use these narcotics are Mahomedans. Hindus incline rather to alcoholic liquors when seeking a stimulant; but with Mussulmans, in Sind, the cheapness, freedom from danger of fatal poisoning by an overdose, its unadulterated state, and the facility with which these drugs are procured, compared with opium, have caused them to be generally employed. Their effects medically are various, depending on the sex. Women, especially of immoral character, use bhang and majum pretty freely; they also affect the constitution and habitude of those addicted to them. In some, intense excitement is produced, which continues for hours together; the individual while under its influence, being very irritable and quarrelsome, and quite unconscious of what he does; others become morose and dejected, strange hallucinations are witnessed, and they flee from imaginary terrors and enemies, believing themselves pursued by fire, floods of water, or rabid animals.

The habitual use of these preparations, in whatever form, has the effect generally of exciting the worst passions, and leads their votaries to commit crimes of various kinds and degrees, although when offences of a more serious nature are meditated arising from jealousy, hatred, and revenge, opium is more frequently resorted to. In some instances of a sluggish temperament, the long use of these drugs, in whatever form, acts as a sedative, but that they never directly lead to insanity, the evidence is conclusive enough. States his opinion, however, that as the use of this class of narcotics is demoralising, and in many cases fraught with evil to the community at large, it is advisable to throw difficulties in the way of the seller and buyer by enhancing the duties on manufacture and consumption, or limiting the cultivation of the plant, and insisting upon the dealer keeping a list of the names of all purchasers for the information of the Police.

The District Superintendent of Police, Shikarpoor, states that as no statistics were kept in his offices, he is unable to show how the use of intoxicating drugs acts on the brains; has no doubt they are injurious. Is of opinion that a tax on hemp would be a fair source of revenue, and perhaps check consumption.

The Honorary Assistant Surgeon in charge, Sukkur Jail, states that his experience does not lead him to believe that the abuse of ganja often produces insanity or other dangerous effects

effects. Bhang is very much used by the people of Upper Sind, especially the lower classes. Mahomedans and Hindus are equally addicted to it. Brahmins and faquirs also use it, and women of immoral professions. It is more frequently used in the hot than in the cold season, and is in great demand on festive occasions. Charas is also smoked by some as a rule; those who use it take bhang; its effects are more quickly manifested than those of bhang. Majum, a sweetmeat composed of bhang, sugar, ghee, &c., is manufactured in the bazaars of Upper Sind, and is chiefly used by the wealthier class of people. Ascertains from inquiry that the moderate use of bhang does not injure the health; a liberal indulgence in it causes loss of appetite and thirst; it is denied that it ever causes insanity, or other violent excitement, or that it leads to the commission of acts of violence. It renders a man timid, and more likely to avoid a quarrel than to seek one; no native would think of taking bhang to prepare himself for any act requiring courage and nerve, but would rather resort to spirits or opium for that purpose. States it is not improbable that in many cases the evil effects ascribed to the use of bhang are due to the mixture with other substances. Is informed that a description of bhang, known as khoi-bhang, is obtained from Khorassan, the use of which is followed by maniacal excitement for several hours; this plant is described in the Indian Pharmacopœia (page 180) under the head of *Hyoscyamus Insanus*; the leaves are powdered, seeds of datura are sometimes mixed with bhang to render it more stupefying. On the whole, is inclined to think that the use of bhang is not more hurtful than spirits or opium, and that as an incentive to crime it has less to answer for than either of those articles. Dr. Lawrence is said to have published an interesting paper in the Madras Medical Journal (vol. VI., 1884, p. 274) on the prevalence and ill-effects of the use of bhang in the native army.

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*Summary of replies relative to the use and abuse of Ganja, Bhang, &c., and their influence in exciting to violent crime, received from the Judicial and Police Officers.*

The police commissioner of Bombay reports that, as far as he is aware, no case of violent crime has occurred within the experience of the police in Bombay in which the cause has been traced to the influence of ganja, bhang, or any other preparation of hemp.

*Surat.*—The session judge of this district reports that in the criminal cases tried by him in his district he has not found the abuse of ganja and bhang shown to be the cause of crimes of violence, but intoxication, the result of indulgence in drink, appears to have accompanied, in various instances, the offences of causing hurt and effected or attempted rape.

*Ahmedabad.*—The session judge of this district reports that he does not remember any criminal cases coming before him in which he had occasion to make any inquiry as to the influence of ganja or bhang in exciting to violent crime, and that his assistant judges report to the same effect also; he is not, therefore, in a position to judge whether it is advisable to restrict in any way the use of those drugs, and states—

“Even if the consumption of these drugs could be virtually abolished by any restrictions, there would still remain many intoxicating liquors which are so cheap that no person need ever have the slightest difficulty in making himself intoxicated if so inclined. In order to be efficacious in the way of reducing crime, restrictions should be placed on all intoxicating liquors or drugs, and that in my opinion would be impracticable.”

*Thana.*—The following are the observations submitted by the judge of this district:—

“1. The practice of smoking ganja and eating other preparations of hemp has existed in India from time immemorial, but is probably less in vogue in the Konkan and Northern Deccan than elsewhere. I am informed in the Thana Collectorate the increase in consumption of intoxicating spirits is diminishing the use of ganja. It is not within my memory that I have ever tried a case as session judge in which it appeared that the offence was committed under the influence of ganja.

" 2. Ganja is used, as I am informed, chiefly by faquirs, gossavees, and bairagis, and by the lower class of Mahomedan population. The lower class of Hindus in the Konkan are as a body addicted to the immoderate use of spirits, which are sold at a very low rate.

" 3. It would, I think, be desirable so to tax ganja, bhang, and other intoxicating preparations of hemp as to make them expensive. Speaking, however, for the Thana and Colaba portions of my judicial districts, I strongly recommend a much higher excise duty on the manufacture of spirituous liquor. It is within my experience that much violent crime is committed in this district under the influence of drunkenness. The very low price of liquor places its use within the means of the poorest class of the Katkaris, Mhars, Mangas and Kolis. It is well known the natives of India do not drink in moderation, they look upon the pronounced feeling of intoxication as the value for the money, and when intoxicated do unlawful acts, for which they often afterwards suffer; and which they would not have done if the opportunity of getting drunk had not been as it were offered to them."

*Puna.*—The judge of this district states that he is unable to furnish any useful information or opinion, as he has no idea that the abuse of ganja produces insanity and other dangerous effects, and cannot recall to mind any case that has come under his cognizance as a judge in which the commission of crime has been caused by the use or abuse of ganja.

*Ahmadnagar.*—The judge of this district reports that during the years 1869-70-71, no instances, as far as he can ascertain, have come before the session judge of persons having been stimulated to crime by the use of ganja or noxious preparations of hemp, and believes that the consumption of bhang and kindred drugs is comparatively small in his district; and states that instances occasionally occur of intoxicating drugs being administered to others, to facilitate the commission of crime by the administering person, and states two cases which appear on the records of his court of this description.

*Belgaum.*—The judge of this district reports that he is not in a position to give any opinion on the questions raised in the letter from the Government of India, as, since the establishment of his district in 1869, no criminal cases have come under notice in which ganja was used. The acting senior assistant session judge reports to the same effect.

*Dharwar.*—The judge of this district reports that since 27th August 1870, when he took up his appointment, only one case has come before him in which the crime (arson) was clearly traced to the habitual use of ganja by the accused, and states that the records of his court afford no information as to the effect of the use or abuse of the several preparations of hemp on crime in his district; that he is unable to give any information from personal knowledge, and consequently unable to offer any opinion as to whether the duty should be increased, or legislation is required for prohibiting or limiting the cultivation of the plant or restricting the sale of the preparations manufactured from it.

*Sattara.*—The judge of this district reports that he has met with no cases in which the use of bhang or ganja could have been suspected to have excited to violent crime, and that the people of his district, for the most part "Koonbees," are not generally addicted to the use of such drugs, and he remembers to have met with no case of any person who indulged in this habit.

*Khandesh.*—The judge of this district reports in very much the same way as the judge of Sattara as to the influence of ganja and bhang in exciting to violent crime, and that in his district preparations of hemp are not much used.

*Canara.*—The judge of this district states that he is at a loss to give any opinion on the subjects raised in the letter from the Government of India, as no cases have ever come under his observation, nor are there any such cases to be found on the records of his court.

*Ratnagiri.*—The judge of this place reports that he has no personal knowledge of the effects of ganja or bhang, and that he has seen nothing to lead him to believe that the consumption of the drug is a probable cause of crime. Forwards extracts from the opinion of his two subordinate judges, and states that, from inquiries made by him, nothing has come to his knowledge which

can lead him to believe that any repressive legislation is required, and that the sale of the drug in his district, he learns, is very small and limited to a few people.

*Ahmadnagar.*—The magistrate of this district is of the same opinion as the superintendent of police of the district (*vide* paragraph 3 of the letter from the Revenue Commissioner, Southern Division, No. 171, dated 27th January 1872, which forms an accompaniment to his letter No. 718, dated 10th February following, being one of the enclosures to the present communication).

*Canara and Belgaum.*—The magistrates of these districts are of the same opinion as the superintendents of police of their respective districts (*vide* paragraphs 4 and 5 of the above quoted letter of the Revenue Commissioner, Southern Division).

*Puna.*—The magistrate of this district reports that he is not aware of the occurrence of any cases in his district in which violent offences have been committed under the influence of bhang or ganja, and he does not, therefore, consider any restrictions on the various preparations of hemp necessary in his district.

*Sholapur.*—The magistrate of this district reports that ganja and bhang are very little used in his district, and that as an incentive to crime their influence does not appear to be appreciable.

*Ratnagiri.*—The magistrate of this district considers that the abuse of ganja does undoubtedly lead to insanity, sometimes of a dangerous description, but oftener to a harmless idiotcy. As regards the influence of ganja and bhang in exciting to violent crime, that the evidence is not so clear, and that no such result appears to follow in taking these preparations of hemp; they are not so widely used in the sea-coast as in the Deccan, and the few instances which do occur of their use are chiefly in the case of wandering gossavees and faquirs. He adds, "It is not improbable that persons meditating crimes of violence may fortify themselves by priming themselves with these stimulants, but they are not so notorious for their influence on crime as spirituous liquors."

*Kulladghi.*—The magistrate of this district reports that he has not been able to discover any instances of the use of ganja and bhang having led to violent crime or any crime at all in his district, and does not consider any restrictions necessary.

*Dharwar.*—The magistrate of this district reports that very little ganja or bhang is used in his district, and that from opinions received he is led to believe that, unless taken to excess, it has not been known to produce baneful effects; no case of its exciting to violent crime is known to have occurred in his district; and, as far as he is aware, the use of the drugs is confined to low Mussulmans and to men from Hindustan, and thinks probably more reliable information on the point may be obtained from the military and regimental hospitals.

*Surat.*—The magistrate of this district says that, in the opinion of those he has consulted, the use of ganja and bhang leads frequently to insanity and sometimes, in consequence, to crime, but not to any great extent. His own experience, shared in by others, is that the consumption of liquor in his district renders the consumption of ganja and bhang less common than it is in other districts, and he considers no preventive measures are necessary as regards cultivating the hemp plant.

*Ahmedabad.*—The magistrate of this district says—

"There is a general consensus of opinion on the deleterious effects of bhang and ganja, even so far as the producing of insanity, but there is no experience of serious offences having been committed under their influence. The assistant surgeon, now acting as superintendent of the lunatic asylum, has reported to the deputy inspector general of hospitals, northern division army, that 'from the history of many of the cases in the asylum, it is more than evident that ganja has been the principal cause of exciting insanity—in some it generally gives rise to acute mania.'"

*Kaira.*—The magistrate of this district reports that ganja and bhang are comparatively little used in his district, the inhabitants being more addicted to opium than to any other stimulating narcotic. Gossavees, faquirs, and other religious

religious mendicants use ganja and bhang to a certain extent as luxuries. He has no objection to urge against the enhancement of the duty on these drugs. The magistrates under him report that they have no evidence to show that the consumption of these drugs leads to violent crime.

*Khandesh.*—The Superintendent of Police states that for the past two years the police returns and reports do not show that the use of the different preparations of the ganja plant has in any degree affected the state of crime in his district; and he is not of opinion that a person using the drug is more likely to commit an offence. The Magistrate of Khandesh, in forwarding copy of the above report, says he coincides in the opinion of the Superintendent of Police.

*Kolaba.*—The Magistrate of this district reports that from inquiries made by him it does not appear that the crimes of violence occurring in his district can be traced to excessive use of bhang and ganja.

*Nassick.*—The Superintendent of Police of this district states that almost every caste in his district indulges in bhang, but chiefly byragies, faquirs, gossavees, and all descriptions of beggars, as it helps them to take long journeys and deadens the pain of suffering and starvation. The Magistrate of Khandesh, in submitting the above report, states that the full-power magistrates in his district all say that they have never known a single instance in which violent crime has resulted from, or been attributed to, the taking of bhang or ganja; but it is stated that the use of these drugs is supposed to induce madness; their use is by no means very common in his district; and he considers no fresh measures for the restriction of the growth of the plant or the sale of its produce necessary, as the produce cannot be sold without a licence, and that this fact of itself is a great check on the cultivation of the plant, and Regulation XXI. of 1829 and Act III. of 1852 appear to him to give as much power as is needed to its retail sale.

The Inspector-General of Prisons reports that there are no recorded facts in his department showing the effects of the use of ganja as increasing the criminal population or exciting to violent crime. Most of the Superintendents of Jails write to say that they have no experience as to the extent the abuse of ganja proves an incentive to crime, and few of them seem to have had their attention drawn to the subject; but they attribute the increase of crime much more to the free use of country liquor than to the use of ganja.

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No. 3863, dated 31st August 1872.

From *J. Ware Edgar*, Esq., Officiating Junior Secretary to the Government of Bengal, to the Secretary to the Government of India, Department of Revenue, Agriculture and Commerce.

In reply to your letter No. 340, dated 10th October 1871, and subsequent reminders, I am directed to submit copies of the undermentioned papers, namely,—

- (1) Board of Revenue's Report, No. 377-B, dated 20th July 1871, paragraphs 1—24, with Appendices A and B.
- (2) Board of Revenue's Report, No. 328-B, dated 31st July 1872, with enclosure.
- (3) Abstract of opinions of local officers on the subject of the effects of the abuse of ganja.

I am also to extract paragraph 18 of this office report\* on the taxation of Bengal; that paragraph runs as follows:—

Paragraph 18.—“Ganja is a preparation from the hemp plant of a highly exciting character. A fixed duty is levied from ganja on a system which is much facilitated by the circumstance that the plant which produces the best drug is cultivated in a manner successful for this purpose only in the Rajshahye district and in part of the adjoining district of Bograh. The cultivation is free from taxation, but the growing crop is kept under supervision of the excise officer. The rules require the quantities cut and stored for sale to be registered. The cultivator can sell only to a licensed

licensed purchaser. The wholesale purchaser having received his licence from the excise officer of his own district, countersigned by the Rajshahye officer, exports the drug under excise supervision, and stores it in his own district still under excise supervision. It is not until he passes it out of his store to the different retail dealers that the excise officer levies the duty at the fixed rate. Up to 1853 the duty on ganja was levied either (1) by selling by auction the privilege by sale, or (2) by charging a fixed duty for each shop under the system described as the daily or monthly tax system.

"From that year a fixed duty of one rupee per seer (of about 2 lbs.) was levied, and the retailer was bound to pay the amount of tax on a certain minimum quantity per month, whether he succeeded in disposing of it or not. That was the system prevailing in 1856-57.

"In 1859-60 the duty was raised to Rs. 2 a seer, but levied only on the actual quantity passed out by the wholesale dealer to the retail shop-keepers.

"In 1869 the system was introduced of charging duty at three different rates, according to the manner in which the plant was prepared and packed, so as to equalise the incidence of the tax on the excisable portion of the plant. The rates fixed were Rs. 4, 3, and 2 per seer. These rates were in force until the beginning of the current year, from which time the rate on that which paid Rs. 2 has been raised to Rs. 2-8 per seer.

"The effect of the measures taken with regard to ganja has been to raise a very much higher revenue while checking the consumption of the drug. In 1856-57 above 17,000 maunds (of 40 seers each) were exported from the producing districts, and Rs. 4,66,965 of duty were paid on the drug; in 1859-60 the exportation had risen to 21,240 maunds, and the revenue to Rs. 6,44,963. In the following year (the duty having been raised from one to two rupees) the exportation fell to 13,000 maunds, but a still higher revenue, Rs. 6,77,000, was raised. During the last five years the consumption has averaged about 11,000 maunds and the revenue about Rs. 10,00,000 (100,000%).

"Lately the tendency appears to be to a rise in the quantity sold, but this is being watched—it being the policy of the Government to raise the duty from time to time to as high a rate as is feasible without giving rise to an illicit trade."

2. The foregoing extract gives a general abstract of the manner in which the ganja revenue is raised, and the first of the appended papers gives a detailed and interesting account of the ganja cultivation and of the ganja revenue. The annexure to that paper gives a brief statement, which perhaps goes much further than any amount of opinions, to show that the ganja revenue in Bengal has been administered so as to raise a large and rapidly increasing revenue from a comparatively small and decreasing consumption of the ganja drug. Thus, in the period from 1853 to 1859, nearly 20,000 maunds of ganja were excised annually, and a revenue of about 4½ lakhs a year was secured. During the period from 1865 to 1870 the annual consumption of ganja has averaged under 10,000 maunds a year, and the average annual revenue has been about 10 lakhs. A part of Orissa is the only tract in Bengal outside the Rajshahye district where ganja is grown and used to any considerable extent for use as a drug.

3. With regard to the questions put in your letter under reply, the Lieutenant-Governor concurs for the most part in the replies given by the Board of Revenue, namely—

*Answer I.*—The excessive smoking of ganja does harm, and is believed to produce temporary insanity and loss of health. Officers in charge of lunatic asylums very generally believe that a considerable proportion of the lunatics under their charge have gone mad from excessive ganja smoking. Some of these insanes recover after some months or years of enforced abstinence from their favourite drug. At the same time the number of people who are known to go mad from excessive ganja-smoking are extremely small in comparison to the whole of the population; ganja has been getting dearer and dearer of late years, and it may fairly be presumed that even if there were no ganja to be had, a certain proportion of the population would go mad from the abuse of some other drug. A prohibition (on the principle of the Maine liquor law) against the use of ganja in any shape would be difficult to enforce; and if the prohibition were successfully enforced, some other drug would probably take the place of ganja.

*Answer II.*—The degree to which ganja excites to violent crime is not very clearly made out. It may be, and probably is, the case that men who have decided on committing a specific crime, to be accompanied by danger or violence, do fortify their bodies, or their spirits, or both, by the use of ganja; but it is not proved that the use or abuse of ganja alone disposes men to violent crime. If the intending criminals required a stimulant and could not get ganja,



ganja, they would probably take opium or some other drug. It is probably true that in Bengal criminals may often congregate in, and sally forth from, ganja shops to commit crime; so they do from opium shops or liquor shops in other parts of India, or from public-houses in London. The connection between ganja-smoking and violent crime is not so close or so strong as to warrant our prohibiting the use of ganja on that ground only.

*Answer III.*—As will be seen from the foregoing paragraphs and from the papers now submitted, the restrictions on the use of ganja in Bengal are very strict. The Board of Revenue and the Government constantly watch the consumption, and from time to time raise the price of (or duty on) ganja, wherever such increase seems possible, without unduly increasing smuggling. The people who grow ganja are under restriction; the wholesale dealers and retail dealers are licensed and watched; and the result, as above submitted, has been that the ganja consumed in nearly the whole of Bengal is now above 10,000 maunds, whereas 15 years ago it was 20,000 maunds. The excise duty on ganja will, perhaps, be still further raised in future years; but for the present it is proposed to leave the duty at its existing figure for the several classes of ganja.

*Answer IV.*—If, as is supposed to be the case, *carmalin* is the intoxicating or narcotising substance of ganja, then it would seem that the Bengal ganja grown in Rajshahye is not, so far as chemical analyses show, either much more or much less deleterious than the ganja grown in other parts of India. The Rajshahye ganja seems to be of a more equable strength than the ganjas of other parts of India; but this result is precisely what might have been expected from the fact that the Rajshahye ganja is all grown in one corner of a single district, on one system, and on the same soil. The proportion of *carmalin* in Rajshahye ganja is about 5 per cent.; the proportion in ganja grown or used in the North-Western Provinces ranges from 1·4 to 6·2 per cent.; the proportion of *carmalin* in Madras ganja ranges from 1·4 to 14·3 per cent.; the average of three specimens from the Bombay Presidency yielded about 7·5 per cent. of *carmalin*.

4. The Lieutenant-Governor regrets that he cannot satisfactorily explain why the Rajshahye ganja is so particularly acceptable all over Bengal. During the last week he has been on tour in the Rajshahye district, and has made such inquiries as he could from the officers on the spot. All he could ascertain was that the Rajshahye ganja plant does not grow to so great height as the same plant in other parts of India; the crop is confined to a small corner of the district, and the cultivation is very carefully carried on at a great expense and with some science, the male plants being preserved and the female ones destroyed. The Lieutenant-Governor at present has no means of judging why the Rajshahye plant is more acceptable—if it really be more acceptable—to ganja consumers than the ganja of other parts of India. But he inclines to think that the Rajshahye product is a finer and better grown drug than that produced elsewhere. He can only attribute the success—for, from an excise point of view, it is a great success—of the Bengal system to the Board of Revenue having at the outset fixed on the right district for encouraging the production of ganja, to their having kept the excise duty low at the outset, and to their having raised it gradually as the demand required. Some part of the success is, no doubt, due to the Bengalees paying more respect to Government regulations and rules in matters of this kind than they have sometimes been supposed to yield.

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EXTRACT from a letter from *F. B. Peacock*, Esq., Officiating Secretary to the Board of Revenue, Lower Provinces, to the Officiating Secretary to the Government of Bengal, Revenue Department, No. 377-B., dated Fort William, the 20th July 1871.

*Paragraph 1.*—I am directed to acknowledge the receipt of Mr. Under-Secretary Wilson's letter No. 1913, dated 25th May last, in which the Lieutenant-Governor requests to be furnished in somewhat greater detail than is given in my letter No. 212-B., dated 29th April, with an account of the system under which ganja, taree, and pachwai are managed, as well as with certain information regarding the monthly tax system.



2. In reply, I am to submit the following report with regard to those articles, following the order in which they are enumerated above, and premising that much of the information respecting ganja herein contained was furnished to Government by the Board in their letter No. 89 of 5th February 1861. In order, however, that His Honour may have before him in a complete form the information he requires, such portions of that letter as were necessary have been embodied in the present report.

3. Of ganja, which is the male plant of the hemp, there are two kinds known in Bengal, one being very superior to the other. The first is largely cultivated in the districts of Rajshahye and Bograh, and in those districts only; the second is the produce of the Gujrat, in the Tributary Mehals of Orissa, and to a small extent of garden cultivation in the regulation districts of that province, particularly Pooree.

4. The plant in Rajshahye and Bograh is sown about August and cut in January. When prepared for sale, it is tied in bundles and conveyed to all parts of the Presidency by wholesale merchants or licensed retail vendors, under rules which will be more particularly alluded to further on. There are

1st, Flat ganja, Ra. 2 per seer.	
2nd, Round " " 3 "	
3rd, Chur " " 4 "	

three different sorts of Rajshahye-grown ganja sold, on each of which a separate rate of duty is levied as shown in the margin; first, flat ganja, which is the plant dried as grown in its natural shape; second, round ganja, so called from the appearance which the rolling of each branch in the drying process, and the simultaneous removal of the thickest portions of the wood, gives it; third, rora or chur, which is only the fragments of the leaves and flowers. With regard to the duty it may be observed that, as the portions smoked consist of the leaves, flowers, and small twigs, the rate rises as the quantity of wood in the bundle diminishes.

5. The Gujrat ganja, which is much inferior in narcotic power to that grown in Rajshahye, is consumed only in the Tributary Mehals and in the districts of Cuttack, Pooree, and Balasore. The rate of duty on this kind is eight annas a seer.

6. Up to the year 1853 the excise surveillance of ganja was very imperfect in consequence of the impression that any restrictions would interfere with the cultivation of the plant for its fibre. Duty was levied, however, in the shape of a daily tax for the privilege of retailing it, but the wholesale trade was left untaxed, though the transit of the articles was watched by the excise department.

7. On its being ascertained that the cultivation of the hemp plant as an article of consumption was confined to a limited area of the Rajshahye division, which readily admitted of being brought under supervision, rules were framed for controlling the cultivation of the plant, for its storage, transport, and vend, and were sanctioned by Government in Orders, Nos. 330 and 594, dated respectively the 9th August and 29th December 1853. These rules, with such modifications as have since been introduced, will be found in Section 17, Chapter V., Board's Rules, pages 75-80.

8. As has been already stated in my letter, No. 212-B., of 29th April last, the cultivation of the hemp plant, whether for use in the green state for medical purposes, or for the manufacture of the fibre, is unrestricted; but the preparation of the plant to be stored, sold and used as a narcotic is prohibited, except under licences granted for the purpose, and for which no fee is payable.

9. An establishment is maintained, with the sanction of Government, in the centre of the cultivation to superintend the storing and sale of ganja. This establishment is employed under the Excise Deputy Collector of Rajshahye, which station has been selected as being more centrally situated as regards the cultivation than that of Bograh.

10. As soon as a cultivator has gathered his crop and prepared it for sale, he takes out the licence, alluded to in paragraph 9, from the supervisor of ganja cultivation to retain possession of the drug, until he sells it either to registered warehousemen in the producing districts, who sell to licensed vendors, or direct  
to

to licensed vendors themselves. He is bound under the terms of his license, to report each sale to the supervisor, who notes down the particulars, and when the entire quantity is disposed of, he returns the license to the supervisor, giving an explanation of any difference between the amount of his produce and that of the sales. A cultivator cannot remove any ganja from his store to that of another, or receive any ganja from other cultivators without the supervisor's permission.

11. The licensed warehousemen who purchase ganja from the cultivator for the purpose of selling it to wholesale and retail dealers are required to register in the office of the Collector of Rajshahye, or other producing district, the warehouses in which the drug is to be stored, and file weekly in the office of the supervisor or other excise officer statements of the purchases and sales effected by them.

12. From these licensed warehousemen and from the cultivators, licensed wholesale merchants and retailers purchase ganja for export to other districts under passes granted by the Collectors of those districts and licenses granted by the Collectors of the producing districts. When passes are given, duplicates thereof are sent to the Collector of the producing district, who prepares the licenses and transmits them to the supervisor or other local excise office.

13. On the exporter reaching the place where he proposes to make his purchase, he delivers his pass to the supervisor or other local excise officer, and provided the license has been received, he can at once purchase and store his ganja in the place indicated to him by the supervisor or other local excise officer. The ganja is then weighed, packed, and sealed in bundles by the local excise officer, who returns the original pass to the exporter after having entered in it the particulars marginally noted, which are also endorsed on the duplicate pass which is returned by post to the district whence it was received.

1. Weight and number of bundles to be charged with single duty.
2. Weight and number of bundles to be charged with one and a half rates of duty.
3. Weight and number of bundles to be charged with double duty.
4. Distinguishing marks by which the bundles may be known.
5. Name of the purchaser and charandar.
6. Mode of conveyance, and the places, warehouses, or shops from and to which the transport is made.

14. When the ganja has been conveyed into the importing district, the excise officer examines the consignment and ascertains that the seals of the bundles are unbroken, and that the sorts and weight correspond with the weight and sorts noted on the pass, and the general condition in which the drug is received, whether dry or damp, or in process of deterioration or decay. Discrepancies between the particulars ascertained and entries in the pass are reported to the Collector, and full duty is at once levied on any deficiency of weight, and on any broken bundles. After this the ganja belonging to the wholesale dealer, as also the retailer if exceeding a month's consumption, is stored in registered warehouses and placed under the joint keys of the proprietor and the excise officer. Deliveries of the drug from these warehouses are made only in the presence of an excise officer and under order from the Collector.

15. Wholesale dealers are at liberty to transport under the prescribed pass any number of bundles bearing the original seal from their stock to any other district.

16. Duty on ganja exported by wholesale dealers from the producing districts, or from one district to another, is not prepaid, if the drug is to be imported into any district within Bengal proper. The retail vendors pay the duty before removing from the wholesale dealer's warehouse the ganja purchased by them. But ganja is not allowed to be exported to foreign\* territory, or to any district not in the Lower Provinces, before payment of full duty. Ganja, when exported by sea to countries beyond the boundaries of British India, is not liable to duty, and any duty paid is refunded on proof of export.

17. As stated before, in paragraph 6 of this letter, duty used to be levied on ganja in the shape of a daily tax on its retail. From 1853 this tax was abolished, and duty at 1 rupee per seer was levied, and the retailer had to pay the full amount on a certain specified quantity in each month, whether he cleared or disposed of it or not. In 1859-60 the duty was raised to Rs. 2 a

\* Vide Government Order No. 365, dated 13th February 1860.

Government Order No. 2952, dated 1st December 1859.

seer, payable on the quantity actually purchased by the retailer, and no more. At this rate duty is now only levied on what is called flat ganja, as has been shown in paragraph 4. On what is termed round ganja, a higher rate of duty, viz., Rs. 3 per seer, commenced to be levied in 1864 under the following circumstances. The duty had previously been calculated upon the gross weight of the plant, wood, fibre, leaf, and all included. In 1863, however, the Board brought to the notice of Government that the removal of the useless wood and fibre was necessary for the preparation of some forms of the drug, and represented that so long as the duty continued to be calculated in the manner just mentioned, a loss of revenue must necessarily accrue on the sale of such preparation of the drug. The average proportion of wood in the ganja plant in its natural state varies from seven to nine chittacks per seer; but the Board proposed that the duty upon ganja artificially prepared should not be raised more than 50 per cent. above the standard rate, because it was believed that in any such preparation of plant then in use at least three and a half chittacks of wood per seer were necessarily left unremoved. At the same time, however, it was pointed out that should means be found of removing a still larger proportion of wood, the rate would have again to be changed. It was soon found that such modification was necessary; for on the duty being raised on round ganja, the dealers almost immediately began to export from Rajshahye in considerable quantities a third sort of ganja, known as chur or rora ganja, from which all the woody fibre had been removed. When the duty was only 1 rupee per seer, the quantity of this description of ganja exported was inconsiderable, and appears to have been nothing more than the broken leaves, &c., that had accumulated in the preparation and manipulation of the other kinds. It now, however, became evident that this preparation was being largely re-orted to by the dealers with the view of evading the incidence of the duty, and the duty on this sort was raised to Rs. 4 a seer, or double the standard rate. Since 1864 the duty has remained unchanged.

18. The price of which ganja is sold is left to be settled between the cultivator and his customers, between the wholesale dealer and retail vendor, and again between the retailer and the consumer. No interference on the part of the Government takes place in these transactions.

19 In Statement A., annexed to this letter, will be found particulars of the cultivation of Rajshahye ganja in the producing tract from the year 1853-54 to 1869-70, with the exception of some years, the figures for which are not available. In Statement B. is shown the quantity of that article exported to other districts, and the revenue realised from 1853-54 to 1870-71. It will be observed that, while the production and export of the drug is considerably smaller than it was in some of the earlier years shown in the Statement, the revenue has increased from Rs. 3,69,801 in 1853-54 to Rs. 11,06,768 in 1870-71.

20. It only remains, before passing on from this subject, to notice briefly what is called Gurjat ganja. This, as has already been stated, is grown almost entirely in the Tributary Mehals, from whence it is brought by licensed vendors under passes granted by the excise department at Pooree, stored in the Government godowns there, and passed out under the rules in force with regard to Rajshahye ganja for sale and consumption by the people on payment of duty at the rate of 8 annas a seer. The vendors, if they have not already a license for selling Rajshahye ganja, take out a separate license, for which they pay Rs. 2 per month. The subjoined statement shows the consumption of the article in Pooree, where it is principally used, though there appears reason for believing that under the name of puttee it is introduced untaxed into the other districts of Orissa by persons holding licenses for the preparation and sale of subzi, sidhi, or bhang.

YEAR.	Consumption.			Duty.		
	Mds.	Sdrs.	Ch.	Rs.	a.	p.
1867-68	18	31	8	875	12	0
1868-69	29	18	0	889	0	0
1869-70	32	11	0	645	8	0
1870-71	39	10	0	785	0	0

21. The present system of importing Gujrat ganja is defective, as it affords no check against this puttee (which appears to be nothing but flat ganja) being brought in any quantities ostensibly, in Cuttack at least, for the purpose of manufacturing sidhi, though in reality to be used for smoking in the same manner as round ganja imported from Rajshahye. The subject has for some time past engaged the attention of the Commissioner of the Division, and he has recently submitted some draft rules for regulating the importation and consumption of all ganja by whatever name called. These rules are now under Mr. Money's consideration.

22. Taree is consumed in two forms,—the fresh juice of the date tree, and the juice after it has undergone the process of fermentation. The rules under which the sale of each kind is regulated, and the fees payable for licenses, have already been given in paragraph 8 of the Board's letter No. 212-B of 29th April last.

23. The use of the juice, either in the fresh state or after fermentation, by the owner of the tree, is not in any way interfered with; he is at liberty to consume as much or as little as he pleases, but he may not sell either the one or the other without a license. Should he do so, he renders himself liable to the penalty prescribed by Section 48, Act XXI. of 1856. When, therefore, a zemindar wishes to dispose of the produce of his tál trees, he lets them to a Parsee, who takes out a license from the collector either to sell fresh or fermented taree. In the districts of the Patna division and in Calcutta taree in both forms is largely consumed. The revenue derivable from license fees for its sale in a fermented state amounted in the former to more than 3½ lakhs, and in the latter to Rs. 37,652, during the year 1870-71, and for the sale of the fresh juice to Rs. 2,151 and Rs. 447 respectively. Fermented taree is also largely consumed in the districts of Monghyr, Bhaugulpore, Hooghly, and Cuttack, and to a smaller extent in nearly every other district in Bengal, except those of the Cooch Behar Division, where the date palm does not grow.

24. The fresh juice, judging from the revenue derived from the license fees during the two last years, is most largely drunk in the district of Sarun, where there were no less than 1,896 and 1,898 licenses granted during the years 1869-70 and 1870-71. The largest numbers granted in any of the other districts were 164 and 181 in Chumparun, 422 and 447 in Calcutta, and 95 and 91 in Hooghly, respectively, during the same two years. The member in charge is not aware of any special reason for the number of licenses granted being so much larger in Sarun than in any other districts, or, indeed, than all other districts put together; the Commissioner of the division will be, however, directed to make inquiries, and, if possible, the subject will be reverted to in the Board's annual report.

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A.

STATEMENT showing Particulars of Ganja Cultivation in the Producing Districts.

YEARS.	Quantity of Land estimated to have been Cultivated with Ganja.	Number of Ryots engaged in the Cultivation.	Quantity of Ganja estimated to have been Produced.	Average Production per Begah.	REMARKS.
	<i>Beegahs.</i>		<i>Beegahs.</i>	<i>Mds. Srs..</i>	
1853-54	2,623	2,416	37,840	14 22	
1854-55	2,100	1,449	15,266	7 11	
1855-56	}				The blanks are caused by the fact that during these years no returns were received in the Board's office from the supervisor of ganja cultivation. Orders have been issued for the annual preparation and submission of a statement showing these particulars.
1856-57	} Figures not available in office.				
1857-58	}				
1858-59	2,099	1,670	19,840	9 18	
1859-60	1,799	1,435	13,973	7 19	
1860-61	1,930	1,412	14,955	7 30	
1861-62	1,854	1,547	15,438	8 13	
1862-63	1,424	1,081	9,985	7 5	
1863-64	}				
1864-65	} Figures not available in office.				
1865-66	}				
1866-67	1,639	1,504	11,115	6 31	
1867-68	1,162	1,053	6,509	5 24	
1868-69	2,097	2,096	13,759	6 22	
1869-70	1,677	1,946	12,111	7 9	

## B.

STATEMENT showing the Quality of Ganja Exported from the Producing Districts and the Revenue Realised.

YEAR.	Quantity of Ganja Exported.			Revenue Realised (Duty and License Fees).			Average Revenue per Seer.			REMARKS.
	Mds.	Srs.	Chs.	Rs.	a.	p.	Rs.	a.	p.	
1853-54	-	-	-	3,69,801	-	-	-	-	-	
1854-55	-	-	-	4,02,264	-	-	-	8	4	
1855-56	-	-	-	4,31,937	-	-	-	9	8	
1856-57	-	-	-	4,60,905	-	-	-	10	6	
1857-58	-	-	-	4,90,310	-	-	-	10	1	
1858-59	-	-	-	5,68,471	-	-	-	10	2	
1859-60	-	-	-	6,44,963	-	-	-	12	1	
1860-61	-	-	-	6,77,164	-	-	1	4	9	
1861-62	-	-	-	7,74,781	-	-	1	4	1	
1862-63	-	-	-	8,90,225	-	-	1	15	8	
1863-64	-	-	-	9,55,554	-	-	2	-	7	
1864-65	-	-	-	9,76,511	-	-	2	6	8	
1865-66	-	-	-	9,55,891	-	-	2	7	6	
1866-67	-	-	-	8,10,346	-	-	2	10	8	
1867-68	-	-	-	9,73,176	-	-	2	6	-	
1868-69	-	-	-	9,68,010	-	-	2	1	7	
1869-70	-	-	-	9,94,129	-	-	2	7	2	
1870-71	-	-	-	11,06,768	-	-	2	6	5	

No. 328-B., dated 31st July 1872.

From *T. Walton*, Esq., Officiating Secretary to the Board of Revenue, L. P., to the Secretary to the Government of Bengal, Revenue Department.

I am directed to acknowledge the receipt of Government Order No. 4001, dated 30th October last, and its annexure, and, in reply, to submit the following report, after receipt of complete information on the several points touching ganja, required by the Government of India in the Department of Agriculture, Revenue, and Commerce.

2. These points are—

(1st.) The effects of the use and abuse of the several preparations of hemp.

(2nd.) The alleged influence of ganja and bhang in exciting to violent crime.

(3rd.) The necessity for further restrictions on the use of ganja.

(4th.) The difference in quality between the ganja grown in Rajshahye and in other parts of India.

3. On the first two points, all the Commissioners were requested by the member in charge to obtain the fullest information from the magistrates and civil surgeons of their divisions.

4. The reports of Dr. Wise, of Dacca, and of Dr. Bose, of Furreedpore, on the first point, which have already been sent to Government direct, are distinct in their observations and conclusions.

5. The various preparations of hemp are ganja, charas, sidhi, or bhang, sabzi, and majum; and the manner in which they are made is described by Dr. Wise. Both Hindus and Mahomedans use these drugs, and their consumption is limited, except in the case of ganja, which is sold almost in every district of Bengal, and is largely consumed by the lower classes to protect them from the ailments induced by damp and cold, and to relieve them from a sense of fatigue and hard labour. The Indian hemp in the form of ganja and sidhi is used for medicinal purposes, and is productive of beneficial results in that respect.

6. The moderate use of hemp in some of its forms, it is said, produces a soothing and exhilarating effect, and a singular species of intoxication characterised by extreme gaiety and an irresistible tendency to laughter. No ill-

ill-effects attend the use of any preparation of the plant, save that form of it in which it is smoked as ganja. The constant use of this drug impairs the vigour both of mind and body, and renders those who are addicted to it liable to paroxysms of sudden and ungovernable rage. People addicted to ganja are generally peevish, hot-tempered, and easily offended.

7. The abuse of ganja-smoking is, moreover, generally stated to produce temporary insanity, and very serious ill-health, attended with loss of appetite and emaciation of body, while the excessive abuse thereof leads to permanent insanity. Dr. Wise has furnished with his report certain statistics of lunacy resulting from ganja-smoking, and the records of the lunatic asylums at Patna, Moorshedabad, and other places, if referred to, will, it is believed, show that in several cases the abuse of ganja is followed by aberration of mind. Mr. Reynolds, Collector of Mymensing, is the only officer who believes the ill-effects of abuse of ganja to have been much exaggerated.

8. On the second point, the answers of the officers consulted are generally agreed. They do not believe that violent crime is induced directly by the use of ganja and bhang. Persons charged with crime and misdeed often plead that they acted under the influence of these drugs, but their statements are untrustworthy and false. There is, however, very general testimony to the fact that the bad characters of a district are, as a rule, ganja-smokers, and that they probably often use the drug as a stimulant to work up their courage before setting out on premeditated robberies. The Commissioner of Patna observes that "this drug has often been given by designing men to those of weaker intellect whom they have induced to become their tools, for the performance of any great or violent crime. Ghazees, or religious fanatics, are usually well drugged with bhang when they have any dangerous work to do."

9. In regard to the third point raised by the Government of India, viz., the necessity for further restrictions on the use of ganja, the local officers generally agree that the interference of Government should not extend beyond the supervision now exercised by the Excise Department, that it is in every way sufficient, and that, by the regulation of the duty up to the limit which checks the consumption without encouragement to illicit dealings, the use of ganja should be kept within moderate bounds.

10. The duty on flat ganja has been increased from the commencement of the current official year; and the Member in charge will not fail to move for a gradual increase of the tax on ganja whenever it is advisable to do so. He does not consider, however, that any further measures are now necessary to restrict or repress the consumption of the drug, as in that case smuggling would increase, and a large number of people who are moderate consumers, would be denied the benefit they derive from the drug, and would be driven to equally deleterious preparations of bhang, which grows wild in many districts of Bengal. The public revenue would also suffer immensely, and no corresponding advantage would be gained.

11. With reference to the fourth point, relating to the difference in quality between the ganja grown in Rajshahye and in other parts of India, I am desired to state that many specimens of the drug have been obtained from the North-West Board, and the Presidencies of Bombay and Madras, and submitted to a full analysis by the Chemical Examiner to Government. Dr. Macnamara's reports,\* copies of which are sent herewith, shew that the Rajshahye ganja is comparatively much milder than that grown in other parts, specially in the Madras Presidency, in many districts of which the essential or active principle of hemp is reported to possess much greater strength.

12. Referring to the last paragraph of the Government of India's letter, I am directed to state that no papers have been traced in the records of this office containing any information as to the effect of ganja in connection with the Law passed in 1824.

\* No. 71, dated 11th June 1872, with annexure.

No. 78, dated 22nd June 1872, with annexure.

No. 71, dated 11th June 1872.

From *F. N. Macnamara*, Esq., M.D., Chemical Examiner to Government,  
to the Secretary to the Board of Revenue, Lower Provinces.

WITH reference to your letter No. 305-B of the 5th June, I have the honour to forward results of analyses of various specimens of ganja. The examination of the few remaining specimens will, I hope, be finished before the end of this week.

“Resinous extract of Indian hemp,” or cannabin, is the active principle of the plant.

RESULTS of Analyses of Samples of Ganja forwarded with letter No. 119-B, dated 1st March 1872, from the Secretary to the Board of Revenue, Lower Provinces.

		Percentage of Resinous Extract.	
Bengal	1. Chur or Rora -	3.9	
	2. Round -	5.0	
	3. Flat -	5.8	
	4. Gujrat -	3.8	
	5. Pattee -	2.3	
North-Western Provinces	1. Mozufferpore -	2.0	
	2. Jhansie -	1.8	
		A. -	3.4
		B. -	3.8
		C. -	2.1
		D. -	5.8
	3. Jaloun -	E. 1 -	4.9
		2 -	6.2
		3 -	5.6
		4 -	5.6
		5 -	1.4
Madras	4. Bareilly -	These three were taken together, as each of them contains a very small quantity of the substance, not enough for analysis.	
	5. Badaon -		
	6. Moradabad -		
	1. Coimbatore -	2.9	
	2. Tanjore -	1.5	
	3. Salem district	Adai Ganja grown on the hills Trepatoor -	3.6
		Ganja with seeds—Trepatoor Taluk -	3.5
Bombay	4. { North Arcot -	1.8	
	{ Bazars of Arcot -	2.3	
	5. Godavery -	5.2	
	6. Nellore -	2.5	
	7. Rajamundry -	2.8	
		From Head Assistant, Collector -	3.4
		„ Tehsildar, Coconada -	3.8
Bombay	1. Ahmednagar -	10.5	
	2. Khandeish -	5.3	
	3. Sholapore -	6.7	
Letter No. 193-B, dated 4th April 1872, from the Board.			
Letter No. 146-B, dated 16th March 1872, from the Board.			
Madras	Trichinopoly—Nos. 1 and 2, but only No. 2 operated upon, as there was not enough of No. 1 -	3.3	
	Ganjam—Several small packets, with probably Telooogo labels. Most of them contain a very small quantity. Some taken out of two of these and operated upon -	2.4	
North-Western Provinces	Kumaon—Ganja, Bhang and Charas, all sent for analyses : only the Ganja operated upon -	3.9	
	Gurwal—not examined ; too small a quantity sent. Terai—Ganja and Charas ; but only the Ganja operated upon -	1.4	

		Percentage of Resinous Extract.
	Letter No. 172-B, dated 28th March 1874, from the Board.	
Madras Presidency	Vizagapatam—No. 1	5.2
	" No. 2	5.1
	" No. 3	4.5
	" No. 4	3.9
	" Nos. 5 and 6 not examined owing to there being too small a quantity of each	
	" No. 7	4.5
	Goruckpore, Bustee	{ A small packet without any label—not examined.
Azimghur	- A tin box without any label—not examined.	
	Letter No. 211-B, dated 17th April 1872, from the Board.	
Madras Presidency	Kistna Ganja containing samples from A to H, all very small ones, except No. G, which was only taken for examination	8.8
	Malabar Ganja grown in a few amshoms of Cherikel Talukum. This contains three small packets, labels unintelligible, so only one of them taken	7.6
	Ganja grown in Urguad Taluk, Malabar, containing three samples	
	Pooreah Ganja (1)	7.3
	Chada Ganja (2)	12.0
	Koorooven Ganja (3) spoiled.	

*F. N. Macnamara, M.D.,*  
Chemical Examiner to Government.

No. 78, dated 22 June 1872.

From *F. N. Macnamara, Esq., M.D.,* Chemical Examiner to Government,  
to the Secretary to the Board of Revenue, Lower Provinces.

IN continuation of my letter No. 71 of 11 instant, I have the honour to forward results of analyses of the remaining specimens of ganja sent with your letters Nos. 231-B and 245-B, dated the 26th April and 2nd May respectively.

RESULTS of Analyses of Samples of Ganja forwarded with letters Nos. 231-B and 245-B, dated the 26th April and 2nd May respectively, from the Secretary to the Board of Revenue, Lower Provinces.

		Percentage of Resinous Extract.
	Letter No. 231-B, dated 26th April.	
Madras Presidency	Ganja grown at Poonamallee, Chingleput	5.5
	" " at South Canara	6.0
	" " at South Arcot	8.7
	Letter No. 245-B, dated 2nd May.	
Madras Presidency	Bellary—Hurpembally Taluk	10.1
	" Penconda	6.7
	" Bellary	9.9
	" Dhurmsala	6.5
	" Madaksira	7.9
	Attee and several other Taluks, all taken together, the quantity of each being too small for operation	5.5
	Kurnool—Kurnool, Mukeshpoor, Ramalla Kotee, all taken together	7.7
	Nandial	8.0
	Madura—A	14.3
	" B—too small a quantity for operation	—
	" C	10.3
	" D	11.9
	" E	6.1
" F	4	
" G	4	

*F. N. Macnamara, M.D.,*  
Chemical Examiner to Government.



No. 2960, dated 16th May 1872.

Office Memo, from *A. Mackenzie*, Esq., Junior Secretary to the Government of Bengal in the Political Department, to the Secretary to the Government of Bengal in the Revenue Department.

With reference to the Memorandum from the Revenue Department of this office, No. 4002 of the 30th October last, the undersigned is directed to state that on receipt thereof the several Commissioners of divisions, the Inspector-General of Hospitals, and the Superintendents of Lunatic Asylums were requested to report on the effects of the use and abuse of ganja and other preparations of hemp. An abstract of their replies is forwarded herewith. It will be seen that the general opinion is that ganja is a favourite narcotic, which does, if used to excess, often cause lunacy; but that its consumption cannot much be restricted, for, even if Government gave up the large revenue derived from this source and stopped the culture of the plant, the wild ganja would still be used and do as much harm. Ganja does not seem of itself to incite men to crime, though it is often used to stimulate and embolden those who are bent on violent crime.

#### ABSTRACT.

##### EFFECTS OF ABUSE OF GANJA.

With reference to the frequent allegation that the abuse of ganja produces insanity and other dangerous effects, the Government of India wished a complete and careful inquiry to be made in regard to the effects of the use or abuse of the several preparations of hemp. The inquiry was not to be simply medical, but to include the alleged influence of ganja and bhang in exciting to violent crime; and if the result pointed to the necessity of restricting the use of ganja, &c., by enhancement of duty, or prohibition of the cultivation of the plant, India was to be advised as to the expediency and practicability of any such measures after a consideration of the question in all its bearings, and with reference to the whole policy of the Excise Department.

It was particularly to be ascertained whether, as was believed, the Bengal ganja, grown in the Rajshahye district, differed from, and was more deleterious than, the ganja produced in other parts of India. The Government of India wished also to be furnished with the substance of any papers that might be in the Bengal Secretariat or in the Board's Office regarding the inquiry which seems to have been made, about the period of the passing of Regulation VII of 1824, into the effects of the use of hemp and its preparations.

The Revenue Department of this office, in which India's letter was received, and from which the final report to India must be made, sent us a copy, with a request that the proposed inquiry might be instituted, and the result reported to that department. They have also called for a report from the Board of Revenue.

From this department reports were called for from the several Commissioners, the Inspector-General of Hospitals, and the Superintendents of Lunatic Asylums, with special reference to the medical and police aspects of the question.

The Inspector-General of Hospitals forwards two Reports from Dr. Bensley, No. 1152, dated 19th February, 1872, the Civil Surgeon of Rajshahye; and Dr. Wise, Superintendent of the Dacca Lunatic Asylum.

No evidence of a decisive character has been obtained to show that the Rajshahye ganja is more deleterious than any other. The belief that it is so may have arisen from the injurious effects of the drug appearing more prominently among Bengalees than among the inhabitants of western India; but the real explanation of this phenomenon appears to be the greater facility and rapidity with which ganja works on weak and ill-nourished constitutions than on strong constitutions supported by milk, ghee, and other such nutritive food.

Dr. Bensley thinks that the effects of the abuse of ganja are more self-destructive to the individual than tending to lead him to commit crimes on others. Dr. Wise also is sceptical of the theory that ganja incites to crime; but that it makes the criminal bolder, more determined, and more reckless of consequences, he considers an established fact. Indeed ganja is said to intensify one's

one's thoughts, whatever may be the objects on which they are bent, and hence it is used by men of widely different characters for different purposes, to assist in religious meditation, to excite the imagination of the satiated sensualist, to raise the courage of the intending criminal to the point required.

Dr. Wise seems to believe that ganja sometimes produces insanity; but he does not think that in every case of a lunatic who was addicted to ganja his insanity certainly resulted from this physical cause.

Ganja is believed to have medicinal properties. It is used to relieve pain arising from whatever cause, and is prescribed by native physicians for colic and other spasmodic affections, for diarrhœa, dysentery, and cholera.

From Superintendent of Cuttack Asylum, No. 28, of 22nd November 1871.

During the last four years the admissions to the Cuttack Asylum, which were the result of ganja or were ascribed to it, ranged from 30 to 37 per cent.

Of 1,520 persons that passed through the Dullunda Asylum during the nine years, the use of ganja, as a cause of insanity, was traced in 768. The Superintendent admits that ganja may not be fairly chargeable as a cause of insanity in all the cases attributed to it, but many cases also, he says, are lost from the reckoning on the other side. He brings to notice that ganja-smokers and bhang-drinkers often add seeds of *dhatūra* to the mixture, so that it is difficult to define exactly the cause of symptoms in any given case. He thinks that the result of restricting the use of ganja may probably lead to the more extended use of *dhatūra* and of country liquor; but he, nevertheless, believes that a great amount of mischief could be prevented if ganja were put out of the people's reach.

A few of the district officers in the Bhaugulpore division recommend an enhancement of the duty on ganja, but the generality of them and the Commissioner see no cause for the issue of any restrictive order. The abuse of ganja is not considered more injurious than the abuse of other drugs or spirits which, when taken in excess, produce insanity and the destruction of health. There is no evidence of ganja acting as an exciting cause to the commission of violent crime. Only one district officer knows of one case of violent crime attributed to it. It is believed to have valuable medicinal properties.

In Assam the district officers generally have no experience of cases in which the commission of violent crime has been traced directly to the influence of ganja, bhang, or other preparation of hemp, though it is believed that criminals have used them to muster up their courage. Hemp grows wild in Assam, but very few of the Assamese use the drug. Its consumption is almost confined to natives from Bengal or other parts. The Commissioner would reduce the quantity which travellers are now allowed to carry without being questioned. He does not consider any other restrictive measure necessary; but if the duty be raised in Bengal, it would be as well, he thinks, to extend the enhanced rates to Assam.

In the Chittagong division two magistrates against one are of opinion that the use of ganja is *not* an incentive to the commission of violent crime. It does not seem to the Commissioner that the addictedness to ganja has become so great an evil as to require special legislation to curb it or put it down. An enhancement of duty on ganja might, he thinks, tend to increase smuggling or the use of other non-dutiable preparations of hemp, such as bhang, &c.

The medical officers in Chota Nagpore, though they can give no authenticated cases, are under the impression that ganja consumers often become insane, and the Commissioner's opinion is in accord with this view. No opinion is expressed as to whether ganja or any other preparation of hemp excites to violent crime.

In the Patna division none of the district officers have furnished reliable information on the influence of ganja in inciting to violent crime; but the Commissioner's experience makes him believe that the drug has often been given by designing men to those of weaker intellect whom they have induced to become their tools for the preparation of any great or violent crime. In the Patna Lunatic Asylum ganja-smoking is assigned as the chief cause of insanity in most of the patients, and

the Civil Surgeon of Shahabad has no doubt that the use of ganja and bhang for long periods, and in large quantities, is a frequent cause of mental derangement in this country. The Commissioner thinks that increase of the duty on ganja would only result in greater smuggling, and make the poorer people resort more freely to the wild hemp, which, though it does not possess the medicinal properties of the cultivated plant, may be, and is, used as a drug.

The Commissioner of Rajshahye is of opinion that the use of ganja in moderate quantities is necessary to the labouring classes as a stimulant, and is beneficial to their health, though, when taken in excess, it has a most prejudicial effect on health, and on the mental faculties. The Magistrate of Moorshedabad states, after consulting the Civil Surgeon, that above 20 per cent. of the persons admitted into the Moydapore Asylum were rendered insane purely by ganja-smoking. The Civil Surgeon believes that this is under the true percentage, and that in several of the cases in which the cause of insanity was "unknown" ganja was probably the cause. As to the influence of ganja and bhang in exciting to violent crime, the Commissioner thinks that it produces the same result as other alcoholic or narcotic substances, though the records of past events do not show that it has any great tendency to increase crime. He believes, however, that a person meditating crime would resort to ganja as a stimulant to serve him, and he believes that its use is very general among dacoits as it was formerly among lattials. He does not think any measures necessary to restrict its consumption; such measures would only increase smuggling, and would deprive moderate consumers of the benefit they derive from the drug, and drive them to equally deleterious preparations of bhang, while the revenue would also suffer immensely without any corresponding advantage being gained.

The magistrates in the Orissa division are generally of opinion that ganja-smoking excites to violent crime and produces insanity. The Commissioner has always looked on a ganja-smoker and a bad character as synonymous, and has, in his connection with lunatic asylums in different parts of Bengal, observed that in a large number of cases insanity had been induced by excessive ganja-smoking. He would not prohibit the culture or sale of ganja, but would discourage its indiscriminate and excessive use. He accordingly recommends that its growth should be prohibited, except in specified localities, to be kept under supervision; that the police should have orders to destroy the plants found elsewhere, and that a penalty should be inflicted for every repeated offence.

The medical officers in the Burdwan division are divided in opinion as to the effects of ganja in producing insanity. The magistrates generally do not consider it as a direct incentive to crime, though persons of bad livelihood often commit crime to enable themselves to indulge in ganja and such other expensive luxuries and stimulants. The drug has medicinal properties, but it is often used by the dissolute for purposes of the grossest sensuality. The Commissioner is of opinion that its use is most pernicious to its victims, and is indirectly and unintentionally in most cases one of the exciting influences to crime. He thinks that it is a wise policy to tax it as highly as possible without driving the people into the hands of illicit vendors and smugglers, and that, whenever an opportunity arises of gradually increasing the taxation, it should not be neglected.

The records of the district officers in the Cooch Behar division contain no instance of crime committed under the influence of ganja or any other preparation of hemp. The Civil Surgeon of Julpigoree states that ganja causes mania, &c. The Civil Surgeon of Gowalparah says that it causes a kind of intoxication or delirium, and a sensation of wildness, followed by disposition to sleep; and that its continued use produces loss of memory, numbness and a want of power over the extremities. The Commissioner has seen many instances of persons becoming insane from the use of ganja; and he has no hesitation in saying that, though it may not directly stimulate to crime, it is used as a stimulus by those who intend to commit it. The murderer of the late Chief Justice appears to him to have been under the influence of this drug; and he traces the etymology of the word *assassin* to a criminal sect who committed their murders under the influence of a preparation of this drug called *husush*.

He thinks, however, that it would be useless to attempt to repress the use of ganja, for it grows abundantly wild; and, though the cultivated description is preferred, yet if the latter were highly taxed the wild weed would be at once brought into use.

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No. 1141, dated 9th October 1872.

From the Honourable *R. S. Ellis*, C.B., Chief Secretary to Government, Fort St. George, Public Department, to the Secretary to the Government of India, Department of Revenue, Agriculture and Commerce.

WITH reference to your letter dated the 10th October 1871, No 338, I am

\* Procs., Board of Revenue, dated 4th May 1872, No. 716, with reports from the Collectors in original. From Inspector-General, Indian Medical Department, dated 17th May 1872, No. 180, with two MS. enclosures.

From Inspector-General of Police, dated 19th January 1872, No. 179.

directed to forward copies of the reports\* received from the Board of Revenue, the Inspector-General, Indian Medical Department, and the Inspector-General of Police, on the subject of the alleged influence which the abuse of ganja has in producing insanity or in inciting to violent crime.

2. The use of the more pernicious preparations of *Cannabis Indica* is much restricted in this Presidency as compared with Lower Bengal and the Upper Provinces of India, as is evidenced by the data furnished by Dr. Balfour, the Inspector General, Indian Medical Department, who shows from the returns of the Bengal Lunatic Asylum for 1870, that 27.5 of the cases were due to the abuse of hemp, while in Madras they were only 4.6 per cent.

3. The Governor in Council is of opinion that the abusive use of hemp in this Presidency does not assume such proportions as to require protective legislation, and that there is no evidence that, as an incentive to crime, it is used to the extent to which arrack and other alcoholic preparations are used.

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EXTRACT from the Proceedings of the Board of Revenue, Madras, No. 716, dated 4th May 1872.

Read the following letters:—

From the Collector of Salem, 15th April 1872, No. 88.  
 „ Commissioner of the Neilgherry Hills, 6th January 1872, No. 2.  
 „ Collector of Coimbatore, 6th April 1872, No. 50.  
 „ „ of Tinnevely, 22nd December 1871, No. 535.  
 „ „ of Madura, 5th April 1872, No 93.  
 „ „ of Trichinopoly, 22nd February 1872, No. 35.  
 „ „ of Tanjore, 24th February 1872, No. 82.  
 „ „ of South Arcot, 28th March 1872, No. 101.  
 „ „ of Chingleput, 6th April 1872, No. 139.  
 „ „ of Bellary, 3rd April 1872, No. 93,  
 „ „ of Vizagapatam, 19th March 1872, No. 183.  
 „ „ of Kistna, 18th March 1872, No. 949.  
 „ „ of Kurnool, 5th April 1872, No. 97.  
 „ „ of North Arcot, 1st February 1872, No. 37.

The letters above recorded will be submitted to Government, with reference to their Order dated 21st October 1871, No. 1598, Public Department.

2. The district magistrates who have reported up to this date are unanimous in the opinion that the use of ganja has nowhere been traced as an excitant to crime, and the magistrate of Salem declares that arrack is held to be the favourite stimulant of dacoits preparing for an expedition.

3. The general testimony is to the effect that the use of ganja is not common and that the cultivation of the plant is exceptional in most districts.

4. The effects of ganja on the consumer are rather vaguely described. Only one officer, the magistrate of Salem, positively connects the use of the drug with insanity, and that of a particular nature; he states that it is known to dispose to suicide. This part of the question, however, is purely medical. The Board are of opinion that there is nothing to connect the use of ganja with crime, and that it is clearly unnecessary to attempt any legal restriction on its consumption or cultivation.

5. The replies still due will be submitted as they are received.

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No. 160, dated 17th May 1872.

From *E. G. Balfour*, Esq., Inspector General of Hospitals, Indian Medical Department, Madras, to the Chief Secretary to Government, Fort St. George.

I HAVE the honour to report, for the information of His Excellency the Governor in Council, that, on the receipt of the Proceedings of Government, No. 1,598 of 21st October 1871, a circular, copy of which is enclosed, was forwarded to all medical officers in this Presidency, requesting them to report the results of their experience as to the effects of the use and abuse of the bazaar preparations of Indian hemp. To this communication thirty replies have been received up to date, and I append a summary, in a tabular form, of the more important facts which the inquiry has elicited. As a whole, the reports which have been received are meagre; but mental or bodily disease resulting from the abuse of the hemp preparations is uncommon in this Presidency, and therefore, few Madras medical officers have had their attention directed to the subject. Copies of the more interesting replies are, however, attached.

2. *General history of Indian hemp, "Cannabis sativa."*—The botanical name of the hemp is derived from the term Kanabis, by which it was known to the Greeks, and the plant is a native of Persia. The variety known as *Cannabis Indica* is identical with *Cannabis Sativa* cultivated in Europe: but the plant as reared in the tropics yields little or no fibre, but contains a resinous product; whereas the European plant abounds in fibre, and produces only a very small quantity of resin. This resinous secretion gives to the Indian hemp its peculiar intoxicating and narcotic properties. Hemp has been used in India and the East from very ancient times as an intoxicating agent, and it is said to have been employed in China by a celebrated physician as an anæsthetic in the third century of the Christian era. He is reported to have used a mixture of wine and hemp powder, and by its means to have rendered his patients insensible to the pain of severe surgical operations. Rumphius in his "*Herbarium Amboinense*" notices the intoxicating effects of hemp as witnessed by him in the East, and calls it the "*Herba Stultorum*." Linnæus speaks of its power as "*vis narcotica, phantastica, dementens anodyna, et repellens*," and Dr. Royle in his "*Illustrations*," mentions various epithets applied to it by the Arabs as indicative of its effects and repute. These are "grass of faquirs," "leaf of delusion" "increaser of pleasure," "exciter of desire," and "cement of friendship." The intoxicating effects of hemp are also popularly known in the north and south of Africa, in Turkey, Persia, Arabia, in South America, and in the Malay Peninsula. It is also known to the Burmese and Chinese; but both these seem to prefer opium as an intoxicating agent. A very interesting article on the products of Indian Hemp will be found in the Bengal Dispensary of Dr. O'Shaughnessy, who was the first to test their powers and to introduce hemp to the notice of the profession as a medicinal agent.

3. *Bazaar preparations of Indian hemp, &c.*—In Southern India three preparations of the hemp plant are sold in the bazaars, *viz.*, *ganja*, or the dried, flowering stalks; *bhāng*, the dried leaves; and *majum*, a confection made from bhāng. Of these three, ganja is the most commonly used in this Presidency, and the mode of taking a dose is as follows: A small quantity of the preparation is taken, slightly moistened with water, rubbed in the palm of the hand, and then put in a pipe and smoked. One pipe-worth of ganja used in this way, and weighing—at the rate it is sold in the town of Madras—fifty grains,

grains, is said by Honorary Assistant Surgeon Moodeen Sheriff to be sufficient to produce intoxication in one or two persons. The cheapness and potency of this preparation of hemp are doubtless the chief causes of its being more generally used than any of the other two forms. It is impossible to arrive at even an approximate idea as to the numbers addicted to its use; but from all accounts the habit of ganja-smoking would appear to be almost entirely confined to the lower classes, and chiefly to the more indolent amongst them, and in the little parterre or backyard of a faquir, a bush or two of the hemp plant is generally found growing. The active and hard-working amongst the poorer classes in Southern India, addicted to stimulants as many of them are, generally resort to some alcoholic beverage. Bhang is used in the shape of a drink prepared in various ways, and chiefly consumed by the better classes. There is no available information as to the extent to which it is used; but, as it is sold in nearly every village, probably a good many of the more strict Mahomedans and Hindoos, who would shrink from spirituous liquors, resort to it as a mild intoxicant. Majum is also generally exposed for sale, and appears to be chiefly consumed at night, with the double object of avoiding detection of the habit and securing the aphrodisiac effects of the drug, for which object the leaves are also applied externally. The Civil Surgeon at Cuddalore states that the custom of taking it at bedtime for the latter purpose is exceedingly common amongst the better classes of Hindoos in that part of the Presidency. On the whole, Mahomedans would seem to be more addicted to the use of hemp preparations than Hindoos, and to prefer ganja to bhang or majum. There is no evidence to show that any of the European or Eurasian population indulge in hemp, alcoholic liquors being the favourite stimulants amongst these classes. The use of hemp as an intoxicant seems, therefore, to be entirely confined to Eastern races, or those living within the tropics; and this is what might be expected, as it is only under a tropical sun that the *Cannabis* produces the peculiar resin which gives it narcotic and stimulant properties.

#### 4. *Effects of the moderate use of Indian hemp:*

(a.) *On the mental faculties and nervous system.*—The immediate effects of a moderate dose of Indian hemp would seem to be as follows: A pleasant kind of intoxication is produced during which langour, dejection, or fatigue is banished; the mind is filled with pleasant ideas, which succeed each other rapidly; there is a tendency to boisterous mirth, which finds vent in singing, laughing, or dancing; the appetite is increased, and there may be some aphrodisiac excitement. The effects will of course, differ somewhat, according as the person has been accustomed to the use of the drug or otherwise, and according to the natural disposition of the individual. Thus, in some it seems to act as a calmative, producing a quiet contemplative mood, while others are rendered irascible and quarrelsome. After the stage of excitement the narcotic effects of the drug are manifested, the person feeling an inclination to go to sleep. Assistant Surgeon Moodeen Sheriff points out that the three bazaar preparations of hemp produces different kinds of inebriation. Briefly his remarks would seem to show that ganja produces a high degree of mirthful or emotional excitement; that bhang induces a quiet, contemplative, happy mood, and that majum has little or no exhilarating effect on the mental faculties, but is chiefly used as a calmative soporific, and probably as an aphrodisiac. Such are the effects of single moderate doses of the bazaar preparations of hemp, and it now remains to consider the results of the habitual use of these articles. From the appended tabular statement of the views of medical officers, it will be seen that they differ in opinion as to the effects of hemp on the mental faculties and nervous system, some believing that its prolonged use in moderate doses has no prejudicial effect, while others think that habitual indulgence is injurious. This diversity of opinion may perhaps be explained by facts brought forward in Assistant Surgeon Moodeen Sheriff's report, viz, that while the use of ganja is highly injurious, that of the other two preparations does not seem to be followed by any ill effects. It is quite possible, therefore, that the reporters, who believe that the prolonged use of hemp is innoxious may have only seen cases in which the milder preparations of the plant were indulged in. That confirmed ganja-smoking is injurious to the mental faculties and nervous system, seems beyond all doubt; but, from what we know of the results of the



habitual use of other narcotics and stimulants, it may certainly be inferred that the confirmed smoker is not content with moderate doses of the drug. In the case of every one of this class of narcotics, habit gradually reduces their stimulant or narcotic effects on the system, and thus as the practice is continued, the dose must be increased to produce the desired effect. It is in this gradual increase that the great danger lies in the spirit-drinker and opium-eater, as well as to the ganja-smoker, and, were it possible for those addicted to such vices never to exceed in quantity or number the doses which can be tolerated by those unaccustomed to their use, there is nothing to show that indulgence would be injurious. When the appetite is once fully acquired, however, such control is extremely difficult, and the habits of opium eating and ganja smoking would appear to be even more seductive and less amenable to the dictates of reason and the influence of the will than spirit drinking. I believe, therefore, that in nearly every case the confirmed ganja-smoker greatly exceeds the bounds of moderation, and that from this circumstance the habit, in course of time, has a most injurious influence on the mind and nervous system generally.

5. (b) *On the general health.*—It will be observed from the tabular statement that very few of the reporters offer any opinion as to the effects of the moderate use of hemp preparations on the general health. Surgeon Joseph, M.D., LL.D., states that their continued use induces debility, and mentions that if a bhang-eater holds his arm in a perpendicular direction for two or three minutes the pulse at the wrist becomes imperceptible. This indicates enfeebled action of the heart, and another observer records the fact that those addicted to the use of the drug frequently suffer from palpitation. With reference to its influence on the digestive organs, Assistant Surgeon Moodeen Sheriff says that ganja is supposed by the smoker to improve the appetite and keep the bowels open. He is evidently of opinion, however, that such effects are only experienced during the earlier stage of the habit, as he immediately remarks :—“Whatever may be the actions of this drug at the commencement, its prolonged use produces very injurious effects on the system.” Another reporter says that ganja-smokers suffer from dyspepsia, and are liable to phthisis and hæmoptysis, and the Civil Surgeon of Henzadah observes that the use of ganja or bhang in the long run proves injurious to health. None of the reporters, with the exception of Assistant Surgeon Moodeen Sheriff, allude to any difference between the ultimate effects of the prolonged use of ganja and of the other two preparations of hemp. He points out that, while ganja is very injurious, bhang and majum have no prejudicial influence on the general health. Regarding bhang, he observes : “The persons who are used to this drink” (prepared from bhang) “are generally in good and robust health, and have a voracious appetite, with an equal increase in the power of digestion.” With reference to majum, he remarks : “It is free from the excitement and other bad effects of ganja.” The general opinion of the several reporters is therefore, in effect, that although ganja-smoking may in the earlier stage of the habit increase the appetite and power of digestion, it ultimately has most injurious effects on the general health, which will be more particularly mentioned when noticing the results of the abuse of hemp preparations.

#### 6. *Effects of abuse of Indian hemp :*

(c.) *On the mental faculties and nervous system.*—The general opinion of the reporters under this head is that the abuse or excessive use of preparations of hemp does in time impair the intellect and nervous system generally. Persons addicted to the vice gradually exhibit more or less marked imbecility or vacuity of mind ; they become careless or indifferent about their personal affairs and appearance ; they are irritable and quarrelsome, and may have hallucinations or illusions that may render them dangerous under excitement. It would also appear that an overdose or succession of large doses may induce a state of excitement, having all the characteristics of acute mania, which may last for some time, or shortly cease on the withdrawal of the drug. A case of this nature, which took some time to recover, is reported by Assistant Surgeon Hackett (No. 15 in tabular statement) ; another, recorded by Assistant Surgeon Boath (No. 13), recovered in three days. A very interesting and highly illustrative case is given by the Civil Surgeon, Cuddalore (No. 9 in tabular statement). A man whom he had daily seen for some time in the streets  
behaving

behaving as if suffering from acute mania, and a known ganja-smoker, was sent to jail for a petty theft. On admission he was emaciated, much depressed in mind, and suffering from physical exhaustion. Of course no ganja was allowed during his incarceration, and in a week he recovered his mental and physical condition, and shortly became one of the most willing and best working convicts in jail. Surgeon Croudace (No. 7) records a case of catalepsy produced by smoking a mixture of ganja and tobacco. The cataleptic state lasted five days, and during this period "the limbs retained any position in which they were placed till moved again." Two of the reporters believe that the abuse of Indian hemp gives rise to organic changes in the cerebral structure, which seems highly probable.

7. (d) *On general health.*—The most marked effects of the excessive use of hemp on the general health and appearance are emaciation, general debility, sunken cheeks, staring eyes, dark lips, and a tendency to diarrhoea or dysentery, which generally terminates fatally. Confirmed ganja-smokers are also subject to chronic bronchitis and other affections of the lungs, and Assistant Surgeon Moudeen Shériff observes that he has "seldom seen persons of this kind not coughing repeatedly while smoking, or quite free from it at other times."

8. *Influence of preparations of hemp in exciting to violent crime.*—The views recorded under this head by medical officers are somewhat conflictory, and as none of them appear to be based on a very extensive series of personal observations or recorded facts, are not of much practical value. Surgeon H. Adam mentions that in the jail at Vizagapatam there are sixteen prisoners who confessed that they had been addicted to the use of hemp; but there is nothing definite to show that their crimes were the result of this habit, except in the case of one man whose intellect seems to have been impaired by indulgence in the drug. A case of petty theft which was committed at Cuddalore, while the delinquent was temporarily insane from the excessive use of ganja, has been already noticed in paragraph 6. But one instance of violent crime, attributed to over indulgence in ganja, has been recorded. This case, which is noted by Surgeon-Major Brett, M.D. (No. 3 of tabular statement), was that of a Havildar of the 35th Regiment, who shot the adjutant of the corps, because he was disappointed in getting promotion, and committed suicide to avoid punishment. This man was reported to have been under the influence of ganja when he committed the crime. On the other hand, the surgeon in charge of the Madras Penitentiary states that there is nothing on the records of that jail to show that hemp preparations incite to criminal offences. From the evidence before me therefore, it does not appear that those addicted to the use of the bazaar preparations of *Cannabis* are more apt to commit ordinary or violent crime than those who exceed in the use of spirits or opium. The most that can be said is that ganja, &c., sometimes produce a species of maniacal excitement, and a person in this state may, of course, commit an act rendering him amenable to the law. Surgeon Adam says that, in the cases that he has seen during the past five years, while in charge of a jail, the "crimes committed by those addicted to the use of preparations of hemp have had more of a predatory than of a violent character." But while the use of hemp does not appear to be a direct cause of violent crime there seems some reason to suppose that men who meditate an offensive or violent act which they would not have the courage to undertake in cool blood, sometimes nerve themselves for the occasion by taking a dose of ganja. Thus, hemp may occasionally be indirectly the cause of crime.

9. *Influence of preparations of hemp in inducing insanity.*—That the long-continued or excessive use of these preparations is apt to induce insanity is very clearly shown by the returns in the annual report on the Bengal Asylums for 1870. The total number treated in these institutions during the year was 1,147, and of these, 316 cases, or 27.5 per cent., were the result of indulgence in ganja or bhang. The statistics of the Madras Asylum do not admit of strict comparison with these figures; but of 302 admissions into this institution between 1st January 1867 and the 31st December 1870, fourteen cases were reported to have been caused by the use of ganja, but in eight of these the cause was doubtful, as the evidence was only hearsay. But, assuming that all the fourteen cases were induced by the use of the drug, this would only give to the



total admissions a percentage of 4.6. From this it would appear that ganja-smoking is much less frequently a cause of insanity in this than in the Northern Presidency, and it may also be inferred that the vice is much less common amongst the people of Madras than amongst those of Bengal. Further evidence on the influence of the preparations of hemp in causing insanity will be found in column 7 of tabular statement and also in the reports of medical officers, attached.

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No. 179, dated 19th January 1872.

From the Inspector-General of Police, Madras, to the Chief Secretary to the Government of Madras.

With reference to G. O. No. 1598, dated 21st October 1871, regarding the effects of the use of ganja, I have the honour to submit the following remarks on the subject, which are based upon reports received from district police officers. These reports coincide with my own experience of the matter.

2. There are sufficient data to show that the abuse of ganja not unfrequently produces insanity. At this moment I have the case of a police constable of the Ganjam district before me who is subject to aberration of intellect caused by excessive ganja-smoking, as testified by a medical certificate. Another constable in North Arcot is now under treatment for mania brought on by the abuse of ganja. In Nellore two cases of violent crime committed by persons under the influence of ganja are recorded. Both these persons were police officers, and the Superintendent of Police states that no less than seven other policemen of the Nellore District have at various times become insane from excessive use of this drug, and out of 47 cases (obtained by recent inquiry) of excessive use of ganja by private persons in various parts of this district (Nellore) insanity has already supervened in 23 cases. The Superintendent of Police, Vizagapatam, states that ganja is very commonly used among the lower classes, and that many, in consequence, suffer from temporary insanity. In 1867 a police constable of the Cuddapah district, when temporarily insane under the influence of bhang, murdered a beggar and stabbed the Tahsildar, against neither of whom he had any motive of malice. A person accused of a murder committed at Puther, in North Arcot, at the beginning of 1871, was declared by the Civil Surgeon to be of unsound mind, in his opinion, from the use of ganja or bhang.

3. With regard to the effect of ganja or bhang as a cause of crime, the Acting Commissioner of Police for the Town of Madras is of opinion that these stimulants, when indulged in largely, do excite to violent crime, but to what extent he is unable to say. He states that the criminal population of Madras town are addicted to these stimulants, and from observation in the penitentiary, it is believed that habitual criminals are most inveterate smokers of ganja; sometimes they become violent under the influence of the drug. But on the other hand, the Commissioner of Police states that ganja-smokers are ordinarily very quiet, with a tendency to imbecility, the general effect of the drug being to stupefy rather than to excite, and that no cases of murder, grievous hurt, &c., are known to have occurred from this cause. The Acting Commissioner of Police states that he cannot quote instances, as the subject has not hitherto received attention. This in itself seems to show that the use of ganja has no marked effect in exciting people to commit crimes.

4. District police officers are unanimously of opinion that, save in very exceptional cases, ganja is not a predisposing cause of crime, although, when a crime has been resolved upon, the drug may occasionally be used for the purpose of creating "Dutch courage." But it is said that for one crime committed under the influence of ganja, many hundreds are committed under the influence of intoxicating liquor.

5. I believe this to be the true state of the case. Dacoits and criminals of that class habitually stimulate themselves with arrack, which is far more suitable to the purpose than ganja, the effect of which is ordinarily soporific. But, in this respect neither the arrack nor the ganja are the primary cause of crime, and,

and, in my opinion, ganja can only be said to be the origin of crime is so far as it produces temporary aberration of intellect, under the influence of which an unpremeditated and purposeless crime of violence against the person may occasionally (though very rarely) occur.

6. It follows that so far as the influence of ganja in exciting to violent crime is concerned, there seems to be no urgent necessity to restrict the use of the drug by legislative action. The other bearings of the question, which are far more important, do not fall within my province.

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No. 66, dated 22nd January 1873.

From the Honourable *W. Hudleston*, Chief Secretary to Government, Fort St. George, to the Secretary to the Government of India, Department of Agriculture, Revenue and Commerce.

In continuation of the letter from this Department, dated the 9th October 1872, No. 1141, I am directed to forward, in original, the Proceedings of the Board of Revenue, dated the 20th ultimo, No. 8477, submitting the report of the Collector of South Canara on the subject of the influence of ganja on crime.

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EXTRACT from the Proceedings of the Board of Revenue, Madras, No. 8477, dated 20th December 1872.

Read the following :—

No. 1471, dated 30th November 1872.

From *H. S. Thomas*, Esq., Collector of South Canara, to the Secretary to the Board of Revenue, Madras.

I have the honour to reply to Board's Proceedings, No. 4899, dated 1st December 1871.

2. Ganja and the other preparations of hemp seem to be useful medicines, pleasant drinks, and enjoyable smoking. Excessive use of them is apparently deleterious, but, as far as I can learn, the mischief done by their abuse can bear no comparison with the evil effects of too much alcohol.

3. The effect of these different preparations of hemp, though both exciting and soporific in different stages, are I understand, more the latter than the former. The chief sufferer therefore in the end, is the debilitated patient. No interdiction seems called for therefore, on police grounds.

4. Whether on sanitary grounds a Government is to interfere with a man's meat and drink is a very broad question. If it does, where is it to stop: There are abuses besides hemp-taking that produce insanity. The prevalence and increase of insanity in Europe, where no one uses hemp, is a terrible subject.

5. Hemp has other valuable use. I do not think that Government should interpose in any way to check the culture of a useful plant simply because one of its properties is sometimes abused. If hemp were discouraged, something else would be resorted to, for intoxicating liquors can be distilled from rice, and almost anything in a state of fermentation.

6. If the Government must interfere, it should do so to check the abuse, not the use: There is wisdom in the Chinese law that punishes a man severely for being so intoxicated as to lose his self-control, on the ground that he has reduced himself to the state of an animal, dangerous to his fellow-creatures; an animal that, were it not a human being, would be killed, but being a human being is spared and well-punished for the expense and trouble to which it has put the police in looking after it and prevent it from committing any violence or indecency.

7. Intoxication is much more a vice of the Englishman than the Asiatic. It is quite a national vice, and drunkards' stomachs are inherited, and the wild tribes we come across are demoralised and even exterminated by our fire water. Our example and our rule have made drunkenness more common in India than it was. With the Hindus, drunkenness was one of the five sins, and that ban not sufficing, the moderate use even of intoxicating liquors was prohibited during the Kali Yuga. The general enforcement of that prohibition our rule will not permit.

8. It would be acceptable to the people, it would be conducive to health, it would be advantageous in a police point of view, and it would be not difficult in operation if we introduced the Chinese principle by way of compromise, and visited intoxication with considerable and increasing fine.

9. But then it should include all intoxication, and not only that arising from the use of hemp, and should be levelled at that which is troublesome or dangerous to others.

10. Section 510 of the Indian Penal Code provides for this, but I think it does so somewhat inadequately.

11. Some interesting details are contained in the enclosed paper by my then head writer, Mr. S. Ball.

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Submitted to Government in continuation of Board's Proceedings, dated 4th May 1872, No. 716.

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Dated 13th September 1872.

Memorandum by *S. Ball*, Esq., on the Uses and Effects of the Hemp Plant, called by the Indians Ganja.

The dried hemp which has flowered is called ganja, the colour is dusky-green, and the odour agreeably aromatic. It grows to about three feet in height, and spreads to about two feet in breadth. At the tip of the branches a heavy bunch of leaves and flowers is found, the stem being nearly bare, or with a few solitary leaves here and there.

Ganja is used chiefly for smoking, beverages, pills or boluses, and medical purposes.

*1st, Smoking.*—A few heads of the plant are moistened with water, stalks and seed removed, and then pressed down on the palm of the hand with the thumb, and the water squeezed out. It is then placed in a chillum, or funnel-shaped earthen utensil, and filled to the stem of the hooka, or hudguddi, and smoked.

*2nd, Beverage.*—The stalk and seed are carefully removed and ground into a paste with jaggery or brown sugar, and dissolved in a small quantity of water and used by the poor as a ready agent of a pleasant drink. The well-to-do classes grind the above with sugar, poppy-seed, coriander, cotton-seed, and ginger, dissolve it in milk or water, and partake of it in the evening.

*Ramrass*—a pleasant drink—

Ganja, minus stalk and seed	-	-	-	-	Tola 4,
Nutmeg	-	-	-	-	No. 1 or 1½,
Cardamoms	-	-	-	-	Pods 4,
Coriander	-	-	-	-	Tola 1,
Poppy-seed	-	-	-	-	„ 3.

Grind to a paste, dissolve in 1½ pint of water and an equal quantity of cow's milk, boil to the consistency of cream, sweeten to taste, and take two wine glassfuls.

*3rd, Pills or Boluses.*—The seed and stalk are removed, fried in ghee and ground with jaggery or brown sugar, and formed into large pills.

*Effects*

*Effects—Smoking.*—The novice retains his equilibrium for about half-an-hour after smoking, when the system becomes affected. It then makes him loquacious and frolicsome, but, after a short time, stupor and drowsiness overcome the smoker, and he sinks into sleep.

The habituated smoker has recourse to his weed occasionally, and requires it to induce sleep and to assist his digestive organs. The veteran smoker finds the herb too weak, and adds thereto a quantity of tobacco, which makes him a-going in 30 minutes. The after effects of hard smoking are lassitude, stupor, and nervousness. The last scene in the career of the dissipated smoker is dry cough, consumption, and general debility.

*Drinking.*—The beverage is slower in action, and its effects on the system are very peculiar; at first it creeps up the spine, causes hilarity, frolic, and wit; at other times it takes a different course, causes sorrow and timidity, and confuses the brain; and, lastly, ends in drowsiness and sleep. The after effects of the night's debauch are failure of memory and heaviness of the head.

*Eating.—Swallowing.*—The action of the bolus on the system is slower at the beginning, but its effects are nearly akin to that of the beverage.

*Medicinal.*—Native physicians prescribe small quantities of ganja in their rahlibs, and they are, on the whole, productive of good results to convalescents suffering from general debility, dysentery, and diarrhœa. People living in malarious localities derive benefit by having a smoke at the chillum or pipe before going to sleep.

The juice of the ganja plant, mixed with cocoa-nut oil and boiled and applied externally, is known to afford relief to people suffering from chronic rheumatism.

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No. 113 G., dated 30th January 1873.

Endorsed by the Department of Revenue, Agriculture and Commerce.

Transferred to the Home Department for disposal, in continuation of Office Memorandum, No. 934, dated the 30th ultimo.

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No. 3773, dated 17th December 1873.

Resolution by the Government of India, Financial Department.

Read the following Papers relating to an inquiry into the effects of the use of ganja and other preparations of the hemp plant :—

Financial Resolution, No. 3661, dated 20th September 1871.

Returned, in original, to the Revenue Department.

Circular issued by the Department of Revenue, Agriculture and Commerce, Nos. 338 and 339, and 341 to 347, dated 10th October 1871.

Letter from Chief Commissioner, Central Provinces, No. 444-27, dated 7th February 1872.

” ” Chief Commissioner, Central Provinces, No. 2953-105, dated 19th August 1872.

” ” Chief Commissioner, Mysore, No. 5651-46 G., dated 23rd February 1872.

” ” Secretary to Government of the Punjab, No. 502, dated 10th April 1872, and Enclosure.

” ” Secretary to Government of the North Western Provinces, No. 92 A., dated 20th April 1872.

” ” Resident of Hyderabad, No. 6, dated 20th April 1872.

” ” Secretary to Chief Commissioner, British Burma, No. 725-65, dated 3rd May 1872, and Enclosures.

” ” Secretary to Chief Commissioner, Oudh, No. 3073, dated 8th July 1872, and Enclosures.

” ” Secretary to Government, Bombay, No. 3069, dated 3rd August 1872, and Enclosures.

- Letter from Secretary to Government, Bengal, No. 3863, dated 31st August 1872, and Enclosures.  
 " " Secretary to Government, Madras, No. 1141, dated 9th October 1872, and Enclosures.  
 " " Secretary to Government, Madras, No. 66, dated 22nd January 1873, and Enclosures.

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*Resolution.*—In September 1871 the attention of the Governor General in Council was drawn to the deleterious effects alleged to be produced by the abuse of ganja and other preparations of the hemp plant.

2. The Local Government were thereupon requested to inquire into the use and abuse of the several preparations of hemp, with reference, not only to their effect upon health, but also to their alleged influence in exciting to violent crime. The opinion of the authorities was invited as to the expediency of restricting the use of these drugs, or even suppressing the cultivation of the plant.

The Government of Bengal was further requested to report whether there was any evidence to show that Bengal ganja grown in the district of Rajshahye differed from, and was more deleterious than, the ganja produced in other parts of India.

3. From the replies which have now been received, it appears that, though on some points the local officers are almost unanimous, yet on others there is wide disagreement. On the whole, the general opinion seems to be that the evil effects of ganja have been exaggerated.

4. The Government of Madras state that hemp is little used in that Presidency as compared with other parts of India. The Papers forwarded point to the opinion that the abuse of ganja tends to impair the intellect and nervous system generally; but there is no evidence to show that the drug acts especially as an incentive to crime, or is employed for that purpose. The Government of Madras, concurring with the Board of Revenue, are of opinion that the evil effects of the use of ganja have not assumed such proportions as to necessitate legislation.

5. Ganja is not extensively cultivated or consumed in Mysore, and its influence in exciting to crime is stated to be very slight. It is, however, reported that, out of a total of 280 admissions to the Lunatic Asylum in Bangalore during the past five years, ganja was assigned as the cause of insanity of 82 persons, of whom 64 subsequently recovered their reason and were discharged.

The Chief Commissioner does not consider that any special measures of restriction are necessary, but he recommends that the sale of ganja and similar drugs should not be permitted, except by vendors specially licensed for the purpose, and that the highest possible Excise duty should be imposed on them so as to limit consumption without encouraging smuggling.

6. The Resident at Hyderabad reports that the use of ganja and bhang in Berar is not extensive, that these drugs are resorted to either before or after the commission of a crime to strengthen the nervous system, and that their habitual use undermines and destroys the constitution, though it is not believed to be specially conducive to the commission of crime.

Mr. Saunders is of opinion that the abuse of these drugs is not so great in Berar as to necessitate any special legislative measures.

7. The Chief Commissioner, Central Provinces, reports that there is a considerable difference of opinion regarding the evil effects attendant on a continual indulgence in ganja-smoking. The people generally are said to be of opinion that continued indulgence inevitably leads to permanent insanity, but this opinion is not borne out by the statistics of the lunatic asylums. Of 317 lunatics received into the Nagpur Asylum since 1864, there were 61 in whom insanity had been occasioned by an immoderate use of ganja. Of these 10 have died, 28 have been discharged cured, and 23 remain uncured, and from this result it is inferred that excess in ganja-smoking does produce an insanity which is transient if the habit be relinquished, but otherwise permanent.

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The superintendent of the asylum at Jubbulpore states that, out of 120 lunatics at present confined, 37 indulged in ganja-smoking, and he deduces from certain statistics which he has collected that there is only one lunatic from all causes for every 300 ganja consumers. The data on which these statistics are founded are not however given. The Chief Commissioner further reports that ganja and bhang do not act as direct incentives to crime, but that they are often taken by persons about to commit grave offences in order to brace themselves up for the dangers they may have to undergo. Several officers are stated to insist on the fact that the use of ganja is always injurious, never beneficial, and that in this respect there exists a material difference between ganja and spirits; but others assert, and with some show of reason, that persons, such as palki-bearers, whose employment subjects them to great exertion and fatigue, are enabled to perform the wonderful feats they not unfrequently do, by being supported and rendered insensible to fatigue by ganja, and that the use of ganja leaves in them no after-effects of an injurious kind.

It is admitted that the consumption of drugs has of late years materially increased in the Central Provinces, and fears have been expressed by district officers that since the introduction of the public central distillery system and the consequent rise in the price of spirits, many people who formerly drank spirits have taken to drugs as a substitute. At the same time, persons whose opinions are entitled to weight, declare that the tastes for spirits and drugs are independent and not affected one by the other.

Taking all the facts into consideration, Mr. Morris is of opinion that some action should be taken by Government to impose restrictions on the cultivation, possession and sale of ganja, and recommends that the cultivation of ganja without a license be absolutely prohibited, and that the issue of licenses be restricted to places where the cultivation and outturn could be checked by the ordinary revenue establishments.

The imposition of such restrictions would not, the Chief Commissioner thinks, be a matter of much difficulty in the Central Provinces, but to be effectual they must be extended to all contiguous provinces.

8. In Bombay ganja is said to produce insanity, but even in regard to this there is not unanimity, and the Government of Bombay, while desiring that ganja and bhang should be treated as other intoxicating drugs or spirits, and the present restrictions on their sale maintained, consider it unnecessary to take measures for the limitation or suppression of the cultivation of the hemp plant.

9. The Punjab Government report that the amount of crime that can be traced to the use of the preparations of hemp is exceedingly small, so small as to make it altogether impolitic and unnecessary to attempt to restrict the sale of the products of the plant by law.

His Honour the Lieutenant Governor states that, though harmless when taken in small quantities, the abuse of hemp may, and often does, produce mental derangement, and it appears that of the total number of cases of insanity treated in the Delhi Lunatic Asylum, a large proportion is due to the use of preparations of hemp.

This percentage in each year, from 1867 to 1871, was as follows:—

1867	-	-	-	-	-	-	11.92 per cent.
1868	-	-	-	-	-	-	16.61 „
1869	-	-	-	-	-	-	17.68 „
1870	-	-	-	-	-	-	20.60 „
1871	-	-	-	-	-	-	17.14 „

His Honour is of opinion that if people were prohibited from using the preparations of hemp and opium, they would, in all probability, have recourse to some other stimulant, such as alcohol, the crime resulting from the abuse of which would be much greater than that resulting from the abuse of those drugs.

10. The reports of the officers consulted in the North-Western Provinces disclose a wide variety of opinion, the prevalent impression being that ganja and charas are exciting in their effect as opposed to bhang, which is described as being lethargic. His Honour the Lieutenant Governor believes, however, that there is but a slender groundwork of facts for this opinion, and that even the returns of the lunatic asylums are based on hearsay reports and have no scientific value.

It appears to His Honour that if the effects of the use of ganja were nearly as bad as is sometimes supposed, either as inciting to crime or as injuring health, such a wide enquiry would have resulted in a more general and decided consensus of opinion and in the production of numerous facts bearing out that opinion. Accordingly His Honour does not recommend the adoption of any special measures to limit or stop the production of the plant. As it grows freely in the country lying along the foot of the Himalayas, and can be cultivated in every moist and low-lying tract, to prevent its production would, His Honour apprehends, be almost impossible.

It is further stated that as the duty on ganja is at present collected in the North-Western Provinces by letting in farm the right to sell the drug in each district or part of a district, it would be impossible to enhance the duty, unless the sale were made a monopoly, and treated by Government in a similar way to that of opium.

11. The Chief Commissioner, Oudh, reports that the conclusion to be drawn from his enquiries is that the evil effects of the use of hemp have been exaggerated; that there is nothing to show that bhang, if used at all, must be used immoderately, or that, if used in moderation, it has mischievous consequences. Ganja, however, when used immoderately, is said to have a tendency to produce asthma.

The Chief Commissioner adds that, though the criminal class makes an immoderate use of these drugs, their consumption does not act as a direct incentive to violent crime, and they are merely taken by those about to commit crime in order to give them fictitious and temporary courage.

The Chief Commissioner believes that any interference with the cultivation and use of hemp and its preparations is not called for on moral grounds, and that arbitrarily to stop their use would merely drive the people to the use of still more deleterious drugs.

12. In Bengal the method of levying the excise duty on ganja differs from that in force in any other province.

A variety of the hemp plant grows wild throughout the whole or greater portion of the province, and another variety is cultivated to a limited extent in the Gurjat in Orissa, and its produce pays a duty of 8 annas a seer. The ganja produced from this plant is consumed in Orissa, but the amount so consumed which pays duty has never exceeded 40 maunds in one year. The variety of plant which produces the well-known Bengal ganja is cultivated only in a small portion of the Rajshahye and Bograh districts; the quantity of land devoted to its production every year being about 500 or 600 acres. Its cultivation requires much care, and the produce when prepared is stored and sold under excise supervision. The rate of duty payable per seer varies from Rs. 2-8 to Rs. 4, according to the quantity of wood mixed with it.

Before the year 1853 the duty on ganja was collected either by farming the monopoly of sale, or by requiring each seller of ganja to obtain a license and charging fees for these licenses. In 1853 a duty of one rupee per seer was levied, and this rate continued until 1859-60, when the system was introduced of charging duty at three different rates, according to the manner in which the drug was prepared and packed, so as to equalise the incidence of the tax on the intoxicating principle. The rates fixed were Rs. 4, Rs. 3, and Rs. 2 and these rates continued in force till the beginning of 1872-73, when the rate of Rs. 2 was increased to Rs. 2-8 a seer.

These measures have been highly successful, for while consumption has been checked, the revenue has been largely increased. The following statement shows

GANJA AND OTHER DRUGS IN INDIA.

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shows the quantity of ganja exported every year since 1854-55, and the revenue realised, both from duty and fees, on retail licenses :—

YEAR.	Quantity of Ganja exported.			Revenue realised (Duty and License fees).			Average Revenue per Seer.		
	Mds.	srs.	cks.	Rs.	a.	p.	Rs.	a.	p.
1853-54	—			3,69,801	—	—	—		
1854-55	19,157	5	6½	4,02,264	—	—	—	8	4
1855-56	18,598	20	12½	4,51,927	—	—	—	9	8
1856-57	17,676	39	12½	4,66,905	—	—	—	10	6
1857-58	19,625	24	15	4,96,310	—	—	—	10	1
1858-59	22,367	22	7½	5,68,471	—	—	—	10	2
1859-60	21,240	12	10	6,44,963	—	—	—	12	1
1860-61	18,015	23	14½	6,77,164	—	—	1	4	9
1861-62	15,396	37	2	7,74,781	—	—	1	4	1
1862-63	11,241	14	4	8,90,225	—	—	1	15	8
1863-64	11,733	23	1½	9,55,554	—	—	2	—	7
1864-65	10,068	18	0	9,76,511	—	—	2	6	8
1865-66	9,663	8	15	9,55,891	—	—	2	7	6
1866-67	7,592	13	4	8,10,346	—	—	2	10	8
1867-68	10,530	13	0	9,73,176	—	—	2	5	—
1868-69	11,506	14	5	9,68,010	—	—	2	1	7
1869-70	10,192	38	10½	9,98,129	—	—	2	7	2
1870-71	11,528	38	13½	11,06,768	—	—	2	6	5
1871-72	10,433	26	8	11,40,320	—	—	2	11	8
1872-73	9,336	10	15	11,89,706	—	—	3	2	11

13. The Lieutenant Governor reports that the excessive smoking of ganja does harm, and is believed to produce temporary insanity and loss of health, and that officers in charge of lunatic asylums are very generally of opinion that a considerable proportion of the lunatics under their charge have lost their reason from excessive ganja-smoking. As the number of people who are known to have become insane from ganja-smoking is extremely small in comparison to the whole population, and as ganja has been growing dearer and dearer of late years, his Honour the Lieutenant Governor is of opinion that the absolute prohibition of the use of ganja is not called for, more especially as such a prohibition would be very difficult to enforce, and would probably have the effect of leading the people to have recourse to some other, and possibly a more hurtful, drug.

The connection between ganja-smoking and violent crime is reported to be not so close or so strong as to warrant the prohibition of the use of ganja on that ground, though it may be the case that men who have decided on committing a specific crime to be accompanied by danger or violence, fortify their bodies or their spirits, or both, by the use of ganja.

No satisfactory explanation has yet been given why the Rajshahye ganja should be more sought after than other sorts. It does not appear to contain on the average a larger proportion of the principle peculiar to the hemp plant than do other varieties, and it undoubtedly contains less than some of them, and his Honour is of opinion that it is more sought after simply because it is a finer and better grown drug than that produced elsewhere.

14. The Chief Commissioner, British Burma, reports that ganja is very little used by the Burmese, and that what consumption there is in British Burma is almost confined to coolies and immigrants from India. The Chief Commissioner is therefore in favour of absolutely prohibiting the consumption of ganja before a taste for it shall have spread throughout the province.



15. Upon a consideration of all the opinions thus collected; it does not appear to the Governor General in Council to be specifically proved that hemp incites to crime more than other drugs or than spirits. And there is some evidence to show that on rare occasions this drug, usually so noxious, may be usefully taken. There can, however, be no doubt that its habitual use does tend to produce insanity.

The total number of cases of insanity is small in proportion to the population, and not large even in proportion to the number of ganja-smokers; but of the cases of insanity produced by the excessive use of drugs or spirits, by far the largest number must be attributed to the abuse of hemp.

In Lower Bengal the circumstances have admitted of a system under which the consumption of ganja has been reduced one-half, while the amount of duty levied on it has been doubled. It would be very desirable to control the cultivation and preparation of ganja and bhang elsewhere in the same way. But it is believed that this would not be easy; indeed, it would probably be impracticable.

16. Moreover, with the exception of the Chief Commissioners of British Burma and the Central Provinces, the Local Governments are not in favour of altering existing arrangements. His Excellency in Council, however, trusts that the various Local Governments and Administrations will endeavour, wherever it may be possible, to discourage the consumption of ganja and bhang by placing restrictions on their cultivation, preparation and retail, and imposing on their use as high a rate of duty as can be levied without inducing illicit practices.

17. As regards British Burma, the Chief Commissioner has already been informed that the Governor General in Council concurs with him in thinking that the cultivation and consumption of ganja should be absolutely prohibited and it has been prohibited from the beginning of the year 1873-74.

*Ordered*,—that the foregoing Resolution be communicated to the Department of Agriculture, Revenue and Commerce, and the several Local Governments and Administrations.

*Ordered* also, that a copy be forwarded to the Home Department for publication in the Supplement to the "Gazette of India."

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— No. 3. —

(Revenue, No. 99.)

Despatch from Secretary of State for India to the Governor General of India in Council, dated 20th October 1892.

My Lord Marquis,

I HAVE received and considered in Council the letter of your Excellency's Government in the Finance and Commerce Department, No. 212, dated 9th August last, respecting the consumption of ganja in India.

2. During the autumn of last year Mr. Mark Stewart drew attention in the House of Commons to the baneful effects of the above-mentioned drug, and suggested that the attention of your Excellency's Government should be invited to the expediency of extending to other provinces of India the prohibition against its use which has for some years been in force in Burmah.

3. You now point out that when the possession and sale of ganja was forbidden some years ago in Lower Burmah, "the drug was very little used by the Native population, its consumption being almost entirely confined to coolies and other immigrants from India," and "that the cultivation of the plant in Burmah which had never been extensive had virtually ceased, the consumers being dependent on importations for their supplies."

4. But as regards India circumstances are different. In the first place hemp, throughout a great part of India is one of the commonest of wild plants, and its eradication would be impossible, and where this is not the case it could constantly

constantly be grown in spots which would be safe from observation and from the risk of detection. Even were it otherwise ganja and other preparations of the plant are produced in Native States and would inevitably find their way into British territories. Lastly, you explain that "India abounds with plants growing wild from which drugs can be procured which are more deleterious in their effects than ganja."

5. You are therefore of opinion that it would be impossible to enforce a general prohibition of the use of this stimulant, the more so as the practice of smoking ganja has existed amongst certain sects from time immemorial to the present day.

6. In this view I concur, as it would be obviously inexpedient to order a prohibition which could not be enforced, while there would be a continual danger lest the consumption should be merely diverted from recognised channels, the demand being met by an illicit trade.

7. But I observe with satisfaction that while you consider absolute prohibition to be impracticable, you deem it your duty to restrict the consumption of ganja as far as may be possible; and I have no doubt that you will impress upon Local Administrations the necessity of making every endeavour to "discourage the use of the drug."

I have, &c.  
(signed) *Kimberley.*

REPORT of the CULTIVATION of, and TRADE in, GANJA in Bengal, by  
Mr. Hem Chunder Kerr, Deputy Collector, on Special Duty.

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## APPENDIX A.

Statement showing the number of persons engaged from year to year in the cultivation of Ganja, the area under cultivation, and the quantity of hemp produced in each year from 1854 to 1876 - - - - - 154

From Baboo *Hem Chunder Kerr*, Deputy Collector on Special Duty, to the Secretary to the Board of Revenue, L.P., dated Calcutta, 2 April 1877.

Sir,

WITH reference to the orders of the Government, I have the honour to submit the following Report on the Cultivation of, and Trade in, Ganja in Bengal.

2. On the 18th of October last I was relieved of my duties in Alipore, and reported myself to the member-in-charge: from that day to the 9th of November I employed myself in reading the records available in the Board's office, and bearing upon the subject of my inquiry. On the 10th idem I left for Nowgong, in Rajshahye, which was reached on the 17th. Making that my head-quarters, I went out frequently to visit all the important ganja villages, examined a great number of fields, held frequent conversations with, and collected as much information as I could from, most of the oldest and intelligent among the ganja cultivators, as also the wholesale goládárs' agents, the ganja brokers, and fariáhs. I also saw the mode of irrigating and manuring the lands grown with hemp, and how and where the drug was stored in the producing tract. I likewise observed the mode in which the drug was examined, weighed, packed, and sealed in the Supervisor's office; and, finally, I took notes of the procedure adopted in the earlier parts of the cultivation of the narcotic, making such experiments in the course of the inquiry as appeared necessary.

3. When the hemp fields were being measured by my clerk and two extra ameens, I obtained the permission of the member-in-charge and visited, in January last, the districts of Burdwan, Beerbhoom, Bhagulpore, Monghyr, Patna, and Arrah, inspecting the ganja golábs and taking notes of the system on which the hemp trade was carried on there, with special reference to the exportation of the drug from some of the Bebar districts, on payment of duty there, to Jounpore, Benares, Allahabad, Mirzapore, and other places by the farmers of the drug maháls of those localities.

4. On my return from the western districts I proceeded back to Nowgong on the 28th of January, and stayed there for five weeks to complete my inquiries by direct observation of the reaping, storing, &c., of the hemp plant and the manufacture of ganja. Numerous measurements, weighments, and experiments were made at every stage of the inquiry, so as to secure reliable averages and trustworthy facts to the full extent necessary.

5. After a tour of three months and twenty-four days, of which nearly three months were devoted to Nowgong and about a month to Burdwan, Beerbhoom, Bhagulpore, Monghyr, Patna, and Arrah, I returned to Calcutta on the 4th of March. As the extent of inquiry required in the western districts was not large, the time devoted to it was necessarily short. It would have been of advantage if I could have personally examined the hemp fields of those districts and seen the process followed in the preparation of bhang, but I was pressed for time, and could not prolong my stay there for the purpose.

6. On my return to the Presidency inquiries were instituted by me among the goládárs of the town, from whom, as well as from the Collector of Calcutta, I obtained much valuable information regarding the trade in ganja.

7. In my Report "On the Cultivation of, and Trade in, Jute in Bengal" (paragraphs 29 to 34), I have already given a brief sketch of the ancient history of hemp. The plant has been known in India from a remote period of antiquity, and is indicated by several very expressive synonyms. The earliest of these appear to be *bhanga*, which occurs in the Atharva Veda, the last of the four scriptures of the Hindus. It is derived

derived from a root which means "to break," and is supposed to imply the process of debarkation by which the fibres of the plant were separated from its stem. This would indicate that even at the remote period when the Veda in question was written—probably about three thousand years ago—the use of the hemp as a fibre-yielding plant was well known and the knowledge fully utilised. The Veda, however, reckons it along with the *soma*, one of the five plants "which were liberators of sin,"\* and this would imply that its narcotic property was also well known. The word is used in the masculine form with a short final vowel, and not, as in later literature, with a long one. Both the masculine and the feminine terms are still in use by the people of the Himalayan regions, who call the male plant *Phul bhang* and the female *Gul bhangā*. In the Kaushitaki Bráhmaṇa† of the Rig Veda, which is next in antiquity to the Atharva, the attributive form of the word *Bhanga*, derivable both from the feminine and the masculine forms, occurs both singly and in combination; one, *Bhángajála*, meaning a "hemp net," and another, *Bháng-sayana*, a "bedstead woven with hempen cords." The masculine form occurs in the celebrated medical treatise of Susruta, in which the plant is described as a medicine for the accumulation of phlegm in the larynx, and for some other diseases.‡ In the Sanskrit grammar of Pánini both the masculine and feminine forms have been used. Words like *bhángya* and *bhángina*,§ "a hemp field," are derivable from either form, and *Bhangáviya*|| "hemp-seed," and *Bhangákata*,|| "hemp pollen," from the feminine. In the Institutes of Manu the feminine form is used, and the plant is noticed for its fibres. In later works the feminine form prevails, but in lexicological compilations both are given.

Next comes a group of names derived from the use of the plant as a narcotic calculated to fortify the courage of warriors, or as a sovereign specific for success in warfare, and these include *jayá* "the conquering," or "that which overcomes all painful feelings;" *vijayá*, "the all-conquering;" *ajayá*, "the invincible;" *trailokya vijayá*, "the conqueror of the three regions of the universe;" and *siddhi*, "the success giver"—all implying victory. *Virapatrá*, or "the producer of leaves which make heroes," belongs also to this class.

The third group indicates the intoxicating property of the plant. It is *ánandá*, "the joyous;" *harshiní*, "the delight-giver;" *mádiní*, "the intoxicator;" *chapolá*, "the causer of unsteadiness;" *mátulí* or *mátulání*, "the wife of dhaturá apple," which is the most potent of narcotics; *ganja* and *ganjákiní*, "the noisy."

The colour of the plant is typified in the name *bharitá*, "the green one." Its pre-eminence is indicated by two names—*indrásana* and *sakrásana*, "the worthy food of Indra," the Jupiter of the Hindus; and its vermin-destroying quality by the term *matkundrí*, from *matkuna*, a "bug," and *ari*, "an enemy." Its habitat is indicated by a single term, *Káshimiri*, meaning the plant of Káshmir; but there is no evidence to show that its original locale was that valley, and that it has thence spread all over India. It is now common all over the lower Himalayan ranges, as it is on the plains. Possibly it was first brought into use in Káshmir, and thence the knowledge spread around. All these names, it will be noticed, are in the feminine gender; and as these are obviously of later origin, the masculine form, which occurs in the Atharva Veda and other very ancient works, must be accepted as the oldest.

The words *gánjá* and *gánjákiná* as applied to hemp are the most recent. In the older dictionaries they are explained to mean a tavern, a drinking bowl, an abode of the low; and their application to the narcotic must be accepted as suggestive of the vile propensities of those who indulge in it. Some modern medical works use them as names of the plant under notice.

8. The term *shesh* used in the Bible has been interpreted by Drs. Eadie and Royle to signify hemp, though others say it is one of the synonyms of flax. The literal meaning of the word, however, in the Hebrew language, as given by lexicographers, is "to be cheerful and joyous," which favours the first interpretation.

9: The

\* यद्वा राग्यानि विदधा सोमश्च निद्रु म दमौ मन्वा यव सहस्रे ना सुचलं हस ।

† Kaus I, 14: IV, 16; V, 17:

‡ B II, Chapter 11.

§ Pan, V, 2, 4.

|| Pánini V, 2, 29.

9. The Arabic name of the plant is *benj*, which is obviously a corruption of the Sanskrit *bhanga* passing through the Persian *beng*.

Arabic name.

Some think the Arabic word to mean *hyoscyamus*, or henbane; but the description given by physicians, who say a plant "of which the leaves, the peel, and the seeds torpify," and the idiomatic form in which the *benj* is said to be "drunk," leave little doubt of the nature of the plant indicated. The common word for hemp in Arabic is *kinnab* or *konnab*, and physicians use it promiscuously with *benj*. It is now admitted to be the origin of the Greek *kannabis* and the Latin *cannabis*. The next name is *hashish*, which literally means "a green herb;" but the name has probably been applied to the drug from the green colour of the draught which is prepared from it, for it is usually in connection with the narcotic properties of the draught that the name is used. "It is the same with the *bharitá* of the Sanskrit writers. Those who drink the draught are called *hasháshins*, or "green-draught-drinkers;" and the learned De Sacy rightly concludes that the English word *assassin* is derived from it, as it is well known that the assassins generally fortified themselves by over-indulgence in intoxicating drugs before undertaking the hateful task which has made them so infamous.\* One Arabic name of the plant is *Hashisha affokra*, which has been translated in "L'herbe de Fakirs," the Fakir's herb; another is *keff*, and in praise of it Takyuddin Mauseli sings "arrête la main de chagrins par l'usage du keff: le keff est le remède des amans tourmentés par les soucis cruels;" another is *shahdánaj*, "the royal grain," from *shah* "a king," and *dánah* "grain" or "seed," which is the counterpart of the Sanskrit *Indrásuna*, "the food of Indra." A variety of the hemp is called *kunnab hindi*, or "Indian hemp," but which it is I have failed to make out. There are a number of other names—such as mean the "grass of fakirs," "the leaf of delusion," "the increaser of pleasure," "the exciter of desire," the "cement of friendship," &c.—of a highly poetical character, all indicating the intoxicating power of the herb, but they need no detailed enumeration.

10. The Greek name of hemp is *kannabis*, which is obviously borrowed from the Egyptians, who must have got it from the Arabs.

European names.

But the borrowing must have taken place at a very early age, for it is now believed by many antiquarians of note that the "nepenthe" or the soporific spiced drug which Helen is described in the *Odyssey* of Homer to have handed in a cup to Telemachus, and the preparation of which she says she learnt from the Queen of Thebes in Egypt, was no other than the *siddhi*. Others stoutly deny this, and a good deal of ingenuity and scholarship have been wasted on the dispute.

A very suggestive explanation may be given of the etymology of *kinnab*, which bears upon the early history of the plant. The Persian *beng* and the Sanskrit *bhanga* or *bhangá* are derived from the same root, and the former seems to be an abraded form of the latter. The word *kinnab* is but the rough and sharp reading of *bhang* or *bang(k)*‡ from right to left, which is the Semitic mode of writing. This would throw some light (though by itself it would be but slight) upon the early migration of the plant from the primitive home of the Aryans to the Indian Himalayas, thence to Persia and Arabia, and to other regions of Asia and Europe, and thence to different parts of the world.

The Italians have made it *canape*, the Poles *konopj*, the Russians *konoplia* or *konopel*, and the Spanish *canamo*; but the French, who, as Gauls, it is said, brought the plant to Marseilles from Thrace, have disguised it as *chanvre*, which, however, with the last two letters dropped and the *ch* pronounced hard, would be *kanv* (or *kanb*). In the Germanic and Scandinavian groups the initial letter has become *h*, which is the first two letters of *chanvre* aspirated, and in the Icelandic it is *hanfr*; Swedish, *hampa*; Danish, *hamp*; (O.H.) German, *hanuf*; (N. H.) German, *hanf*; Dutch, *hennup*; Anglo-Saxon, *henep*; and English, *hemp*.

The

\* Vide *passim* Lane's *Arabian Nights* and *Arabic Lexicon*, Von Hammer Purgstall's "Contes Inédites des Mille et Une Nuits," and De Sacy's "Chrestomathie Arabe."

† *Od.* IV., 1, 22.

‡ The Arabs substitute *h* for *g*, which letter is wanting in their alphabet. The borrowing of Sanskrit words by Arabian writers, specially those used in science and medicine, is a well-known fact.

The following is a list of all the names of hemp known to me;—

Anglo-Saxon	- Henep.	Malayalam	- Lacki-lacki.
Arabic	- Kinnab or Kounab.	Ditto	- Jeru kansjava.
Ditto	- Hushish.	Persian	- Beng.
Ditto	- Shahdánaj.	Ditto	- Kunnab.
Ditto	- Keff.	Polish	- Konopj.
Barbari	- Fasukh.	Russian	- Konoplia.
Bengali	- Gánjá.	Ditto	- Konopel.
Ditto	- Siddhi.	Sanskrit	- Ajayá.
Ditto	- Bháng.	Ditto	- Anandá.
Bombay	- Fasukh.	Ditto	- Bhangá.
Burmese	- Bin.	Ditto	- Bhangá.
Ditto	- Ben.	Ditto	- Bharitá.
Chinese	- Mafuen.	Ditto	- Chapalá.
Ditto	- Chutsao.	Ditto	- Gajásana.
Danish	- Hamp.	Ditto	- Ganjá.
Dukhini	- Gánjá.	Ditto	- Ganjákiní.
Ditto	- Sann.	Ditto	- Harshiní.
Dutch	- Hennep.	Ditto	- Indrásana.
Egyptian	- Sjaránk.	Ditto	- Jayá.
Ditto	- Sejdanak.	Ditto	- Matkunári.
English	- Hemp.	Ditto	- Mátukí.
French	- Chanvre.	Ditto	- Matulání.
German N. H.	Hanf.	Ditto	- Mádiní.
Ditto O. H.	- Hanaf.	Ditto	- Sakrásana.
Ditto	- Kannabis.	Ditto	- Sana.
Greek	- Kannibas.	Ditto	- Trailokya-vijayá.
Guzrati	- Sann.	Ditto	- Vijayá.
Hindi	- Bhang.	Ditto	- Virapatrá.
Ditto	- Gánjá.	Singhalese	- Matkansha.
Ditto	- Phulbhang (male).	Spanish	- Canamo.
Ditto	- Gulángá or Gulbhan- gá (female).	Swedish	- Hampa.
Icelandic	- Hanpr.	Tamil	- Sann.
Italian	- Canape.	Telegu	- Ganjayi.
Javanese	- Gindshi.	Uriyá	- Gánjai.
Latin	- Canabis.	Ditto	- Ghádá.
Ditto	- Cannabín.	Ditto	- Kusumu.
Malayalam	- Ganjá.	Yunani	- Kinnabis.
		Ditto	- Defroonoos.

11. It is on record that a knowledge of the uses of hemp, both for its fibres and for its narcotic properties, was possessed by the ancient Thracians and Scythians. Of the former Herodotus says,—“They have amongst them a species of hemp (*kannabis*) resembling flax, except that it is both thicker and larger; it is indeed superior to flax, whether it is cultivated or grown spontaneously. Of this the Thracians make themselves garments, which so nearly resemble those of flax as to require a skilful eye to distinguish them; they who had never seen this hemp would conclude these vests to be made of flax.”\*

Hesychius, quoted by Larcher in his annotations on the above passage, says that “these garments were doubtless worn only in summer.” These clothes seem to have been the same as the *bhangelá* wrappers of the hillmen of the Himalayan regions.

Herodotus says again, “The Scythians take the seed of this hemp and, placing it beneath the woollen fleeces we have before described, they throw it upon red-hot stones, when immediately a perfumed vapour ascends stronger than from any Grecian stove. This to the Scythians is in the place of a bath, and it excites from them cries of exultation. It is to be observed that they never bathe themselves. The Scythian women bruise under a stone some wood of the cypress cedar and frankincense. Upon this they pour a quantity of water

\* Herod. Melp. 74.



water till it becomes of a certain consistency, with which they anoint the body and the face. This at the time in Paris an agreeable odour, and, when removed on the following day gives the skin a soft, beautiful appearance." \* Larcher, departing from the rendering of Beloe, translates the phrase in the original of the above passage (*Αγάμνοι τῆ κρυπῆ*) into "stupified by this vapour," and observes, "I understand by this the stupor or sort of intoxication occasioned by the vapour; and such was the opinion of M. Wesseling."

This is a curious mode of simultaneous intoxication and purification, but Larcher gives the following citation to show that the Indians of Hudson's Bay have to this day a similar custom:—"When they wish to procure a perspiration they take a large round stone, upon which they make a fire, and keep it up till the stone becomes quite red; they then erect around it a small hut, which they carefully close up; they enter naked with a vessel of water, with which they sprinkle the stone. The water being converted to a moist warm vapour, which fills the tent, causes a rapid transpiration." The Siberians, it is said, get themselves intoxicated by the vapour of the hemp seed thrown upon red-hot stones. The Massagetæ are described by Herodotus to have done so with a kind of fruit. Hemp is also noticed by Galen and Hippocrates.

Speaking of the huge triremes which King Hiero of Syracuse caused to be built in or about the middle of the third century, B.C., under the superintendence of Archimedes, Athenæus says that "he provided cordage from Spain, and hemp and pitch from the River Rhone"; their "sail-cloth was generally woven from hemp." † Dioscorides is cited by various authors for the statement that hemp was one of the many materials which in process of time were substituted for twisted thongs in the manufacture of ropes and cables.

12. Pliny, who lived in the beginning of the first century, represents ‡ hemp as a ferulaceous plant growing in the Roman gardens and "remarkably useful for making ropes." He describes the mode of its cultivation and the times for sowing, cutting, and drying, and says there were three varieties of the fibre, those nearest to the pith being the least valued, while those in the middle, and hence called *mesa*, were most esteemed.

The hemp of Alabanda was the best, particularly for hunting nets, and that of Mylasa was of second rank; in respect of size, he says that the hemp of Rosea was equal to a tree in height. This is something like the gigantic hemp of China described by travellers. Varro and Columella make mention of it, and sails made of hemp are alluded to by Tacitus and Juvenal.

13. In Egypt the hemp has been known and used from the remotest antiquity, both for its fibre and for its narcotic effects. In the account of the Fakirs' herb given by Tukyuddin Mukrizi, quoted by de Sacy, we have a very interesting and vivid description of the use of the drug in mediæval times ("Chrestomathie Arabe," II., pp. 120 ff.). Two varieties of the herb are mentioned, "the cultivated" (*de jardin*) and "the wild" (*sauvage*); they are both equally denounced as "ordures révoltantes." Mukrizi observes, "J'ai reconnu que l'usage de cette drogue produit des inclinations basses, et avilit l'âme. Nous avons toujours observé ceux qui en avoient contracté l'habitude, et nous avons remarqué constamment que toutes leurs inclinations naturelles se dégradent, et que leurs facultés alloient en diminuant de plus en plus; en sorte qu'à la fin il ne leur restoit plus, pour ainsi dire, aucun des attributs de l'humanité." Lane, speaking of the modern Egyptians, says, "It is amusing to observe the ridiculous conduct and to listen to the converse of the persons who frequent these shops," called *mahsheshes*, for the sale of intoxicants.

Nowhere are so many forms of hemp used for intoxication as in Egypt. There its leaves and capsules, under the name of *hashish*, are smoked with the pipe called *gozeh*. The habit commenced with the lower orders of people and pilgrims, and is now common with the people of the metropolis and other towns. Conserves of numerous sorts, with specific virtues attributed to them, are

\* Herod. Melp., 75.

† St. John's "Manners and Customs of Ancient Greece," vol. iii., pp. 306 and 315.

‡ Nat. Hist., Bk. XIX., ch. 66.

are there prepared with the leaves, flowers, or capsules of the plant. One sort is the *májum*, well known in India; the second is the *barsh*, also well known amongst the well-to-do Mahomedans here as an aphrodisiac; a third sort is said to provoke singing or laughing; a fourth being soporific, and so on.

14. The Arabians, it is supposed, received the hemp plant from Persia or India in ancient times. They knew the use of its fibre, as they name their small cord bow-string and tent rope, *kináb* (قناب), and the long veil of their females is called *kinráb*. But they prized it also for its narcotic properties; in fact, they now esteem it only on this latter account.

In the "Ain-i-Akbari" there occurs the following description of the plant:— "Hemp bears yellow flowers during the rains. Hemp grows in clusters like a nosegay. The leaves of the plant resemble those of the chenor tree, and of the bark is made rope." (Vol. I., p. 89.) In another place it is stated "that large ropes are made of hemp." (Vol. I., p. 79.)

15. In India the *ganja* for smoking and the *siddhi* for a drink are favourite offerings for Siva. In the celebrated shrine of Tárakesvara they are cast over the phallus by devotees from all parts of India, but I am not sure whether any trace of their being sacred to the Himalayan god Mahadeva can be found in the Sástras. Certain plants are described by Plutarch as sacred to Osiris, in Egypt, where Phallus worship was, like that of the Siva in India, very prevalent; and among these plants mention is made of one with trifurcated leaves. It might have been the hemp, the top leaves of which are formed of three leaflets, and which plant is very common in that country.

The grotesque behaviour of the *Genjels* of India is exactly the same as that of the *hasháshins* of Egypt, and the author of the "Dhurta Samágama" describes such conduct on the part of a quaffer of the *siddhi*.\* Rájaballabha, a somewhat modern writer, describes, amongst the other virtues of hemp, its power of curing leprosy and increasing strength and memory. In pouring eulogy on its qualities, he also says, "it was given out on the churning of the ocean for the benefit of man." The "Háraválí" also says of it that on using it a kingdom even is slighted. The word *siddhi* also, in the sense of a hemp liquor, is first met with in this work.

It is said that Indra supplemented his Soma beer by large potations of *siddhi*, whence its name *indrásana*, "the food of Indra." The "Tantras" abound in references to the drug as a potent means of disengaging the mind from its mundane associations, leading it up to the divinity; and hermits and fakirs appeal to these authorities to justify their inordinate attachment to the drug. The "Tantras," however, do not confine their recommendation of the drug on the score of its aptitude to promote intellectual abstraction; they supply a large number of recipes for the preparation of conserves and electuaries, which are strongly commended for their aphrodisiacal virtues.

16. The hemp belongs to the natural order of *Urticaceæ*, which includes several families of plants, such as the *Urtica*, *Bœhmeria*, *Morus*, &c., noted for their fibres and other economic uses. The hemp is a representative of the family called *Cannabineæ* by Blume. Its generic name is *Cannabis* (Sprengel's "Systema Vegetabilium," III., page 903), and its specific name *Sativa* or *Indica*. The *Sativa* and the *Indica* were originally supposed to be two distinct species, but opinion has greatly changed since. According to some botanists, they are identical; others think them to be only varieties of one typical species, and some take them to belong to distinct species. Mr. Clarke, Inspector of Schools, Rajshahye Division, who is an accomplished botanist, and has paid particular attention to the subject, says—"The whole country abounds (especially in waste spots around villages) with the wild hemp, *Cannabis Sativa*, L. Of this the males and females equally abound. The ganja plant is supposed to be a variety of this species by most botanists; but as two such authorities as Griffith and Benjamin Clarke have doubted this, it may fairly be considered an open question whether the ganja plant should be considered a different species. In spite of the distinction

\* Act II., p. 95. Lassen's "Anthology."

inction of the males of ganja, I have not been able to discover anything like a hybrid between the wild hemp and ganja, which favours the supposition that the two are very distinct varieties, if not to be reckoned as species. The ganja plant differs from the wild hemp in its woody, thick, straight stem, its bushy pyramidal habit, the crowded female flowers, the shape of the calyx and bracts of the female flowers, and the presence of the viscid, ganja-bearing glandular hair on the calyx and bracts." Others whom I have consulted on the subject, and who are competent from their knowledge of botany to form an opinion, feel equally disposed to accept the two as different varieties, if not distinct species; I must therefore leave the question undecided for the present. I need only add that the so-called "wild hemp" is not necessarily a wild plant, but in many places it is cultivated for its leaves.

17. In the wild state the plant is common all over India, and grows to a height of from five to six feet, a few vigorous specimens rising to nine or ten feet—a bright, handsome,

Description of the plant.

pyramidal plant, with rich green leaves, and greenish-white small flowers.

The cultivated variety is a little more stunted, rarely rising above six feet, and more slender, delicate, and regularly pyramidal, assuming more the character of the cypress, though not quite so fastigiated. The root of the plant is white, fusiform or spindle-shaped and covered with fibres. The stem is erect, six or eight inches in circumference, simple when crowded, but when growing apart branched even from the bottom, angular, and, like the whole plant, covered with fine, but rough, pubescence; it is hollow within, or wholly filled with a soft pith. The pith is surrounded by a tender, brittle substance, consisting chiefly of cellular texture with some woody fibres, which are called the *reed*, *boon*, and *shove* of the hemp. Over this is the *bark*, which is composed of fibre extending in a parallel direction all along the stalk. The *fibres* consist of delicate fibrils united together by cellular tissue, and all covered by a thin membrane or cuticle. The *leaves* are opposite or alternate, on long weak petioles or leaf-stalks, rough, digitate, that is, with several leaflets radiating from a common point, which are from five to seven in number, narrow lanceolate and sharply serrated; pale green on the inner side, the uppermost being three only, and the lower ones smallest, but all of them tapering at the apex into a long, smooth, entire point.—(Royle, Drury, Elliot, and Voigt). The *stipules* or processes developed at the base of the petioles are subulate or awl-shaped, pale green and inconspicuous. The *male flowers* grow in small bunches on a separate plant; they are lax and pendulous, and are either axillary, that is, inflorescing at the axils of the upper leaves, or drooping in racemose panicles, that is, hanging from the secondary stalks of the peduncle or flower-stalk. The *bracts* are subulate. The *perianth* is five-parted, that is, the calyx having five narrow lanceolate sepals, the segments not quite equal and downy; they have five *stamens*, with short filaments and large, pendulous, and two-celled *anthers* or pollen cases, the cells being united by their backs opening by a longitudinal slit. These male plants are called in British Gurhwal *phulbhang*; in Bengal, where they have no specific name, they are generally cast away as useless, being very deficient in that resinous secretion which makes the ganja an intoxicant, and for which purpose only hemp is cultivated in this country. The *female flowers* appear erect in packed clusters, growing in spikes with leafy bracts; the *perianth* consisting of a single, spathe-like sepal, which is persistent, acuminate, ventricose at the base, embraces the ovary, and is covered with short brownish glands. The *ovary* is sub-globular and one-celled, with one pendulous *ovule*, prolonged into a short *style* bearing two stigmas, which are elongated and glandular. The *nut* or fruit is seated in a cup-like receptacle; it is ovate, greyish-coloured, smooth, covered by the sepal, bivalved, but indehiscent (not splitting when ripe), and inclosing a single oily seed. The *seed* is pendulous. *Testa*, or the seed-skin, membranous and marked at the apex with a coloured hilum (the point of attachment of the seed). The *embryo* is doubled upon itself, and contains no albumen. The *radicle* is elongated and turned towards the hilum, and the apex of the nut is separated from the plano-convex cotyledons by a small quantity of albumen. To distinguish these plants from the *males*, the natives of British Gurhwal call them *goolbhangá*. (Royle, &c.)

The plant is an annual, and dies soon after flowering, or as soon as the seeds have ripened. In the wild state it grows all the year round, but in the cultivated

vated state the seeds are sown in August and September, and flower in December and January.

Botanical characters.

"Indica," page 299:—

18. The following is a summary of the botanical characters of the plant as given in Lindley's "Flora Indica," page 299:—  
 "The plant is dioecious, annual, about three feet high, covered over with a fine pubescence; the stem is erect, branched, bright green, angular; leaves alternate or opposite, on long weak petioles; digitate, scabrous, with linear lanceolate, sharply-serrated leaflets, tapering into a long, smooth, entire point; stipules subulate; cluster of flowers axillary with subulate bracts; males lax and drooping, branched and leafless at base; females erect, simple, and leafy at the base; ♂ calyx, downy, five-parted, imbricated; stamens, five; anthers, large and pendulous; ♀ calyx covered with brown glands; ovary, roundish, with pendulous ovule, and two long filiform glandular stigmas; achenium ovate, one-seeded."

19. The most remarkable peculiarity of this species of plant is that it is dioecious, *i.e.*, some of its members are male and others female. A few never bear any flowers, and these are called *khásiá*, *i.e.*, hermaphrodites in the ordinary, but not in the botanical, sense of the word. The fact of the separate sexes being on different plants is a peculiarity worthy of special note, as only one of them yields the narcotic called ganja, and there seems to be considerable difference of opinion as to which it is.

20. The cultivators themselves and the people around them, also some high officials of Government, think that the narcotic is yielded by the male plant. The cultivators call these the *mardá* (male), and in their opinion all the *mádtí* (female) plants, which grow in the fields in large numbers along with the plants of the other sex, should be carefully searched out and removed or destroyed before they flower, as otherwise they are sure to cause all the ganja-yielding plants in its neighbourhood to run into seed, and not to produce the narcotic. The presence of a single plant of the kind, they believe, is enough to ruin an entire field. This is, however, an exaggeration, inasmuch as a few male plants always escape destruction, and seeds are by no means rare in ganja. Some of the seeds may, however, be due to the fact, noticed by Royle, of some plants being monœcious, that is, bearing both male and female flowers. To definitely settle the question as to which sex yields the ganja, I have had plants of both sexes very carefully examined by Dr. King, of the Imperial Botanical Gardens, and by Mr. Clarke, and I am assured by them that it is the female plant which yields the ganja, and not the male one, and this is fully borne out by others whom I have consulted on the subject. Mr. Clarke, in a letter to the Collector of Rajshahye, says, "I have lately visited numerous fields of ganja cultivation in the neighbourhood of Nowgong, in this district. The ganja plants are now in full flower, and in these cultivated fields I could find no male plants at all: every plant of some thousands must have been female." The very fact which the cultivators adduce in support of their opinion, that the presence of the *mádtí* leads to the male plants running into seed, is, I believe, quite conclusive. It is the female which can bear seed in the ordinary course of nature, and not the male; and the destruction of the male plants before flowering removes from the field the source of the pollen, which is absolutely necessary for impregnation. The cultivators, ignorant of the peculiar characters of the male and the female flowers, and yet noticing the fact that the presence of the two kinds of plants in the same field leads to the seeding of one variety, have at random named them male and female, without being able to determine which is which. The marks of difference between the male and female plants before flowering are so slight that to non-professional persons they are not easily perceptible. The cultivators notice one or two rounded bristles, which in the male plant look much thicker than those in the female ones. This difference is not visible in the *khásiá* or hermaphrodite plants, which look healthier and more bushy than the other two. As they do not flower, their presence in the field is perfectly innocuous.

21. The narcotic property of the plant is due to a resinous substance which is secreted in minute glands both in the leaf and in the flowers. On the Himalaya this resin exudes freely during the hot weather, and, being collected, is sold under the name of *charas*. On the plains of India this exudation never takes place from the leaves; but the resin remains in their substance, and may be extracted from them by infusion or decoction in spirits of wine or ether. In the flowers, too, it is largely secreted so long as the ovaries remain unimpregnated, and a slight exudation also takes place which gives them a sticky, unctuous feel; but after impregnation this disappears, and the ovaries become dry and comparatively inert: hence the anxiety to remove the male plants and enable the ovaries to secrete and retain the resin to perfection; and these ovaries, as also their surrounding appendages, the calyces and bracts, constitute ganja. The ganja of commerce includes, besides them, stalks, petioles, stipules, and a few leaves; but ganja-smokers carefully reject these as unfit for use. The seeds contain no resin and are inert. The seeds referred to by ancient writers are obviously the unimpregnated ovaries.

22. The resin in question has been named *Cannabin*. According to Dr. O'Shaughnessy ("Bengal Dispensatory," page 581), it "is very soluble in alcohol and ether; partially soluble in alkaline; insoluble in acid solutions; when pure, of a blackish-grey colour; hard at 90°; softens at higher temperature and fuses readily; soluble in the fixed and in several volatile oils. Its odour is fragrant and narcotic; taste slightly warm, bitterish, and acrid."

23. The quantity of resin present in ganja differs greatly and in different specimens. In 1872 Dr. Macnamara examined 61 samples collected from different parts of India, and the percentage of resinous extract obtained by him varied from 1.5 to 14.9, the Bengal specimens ranging from 3.9 to 5.8, the North-Western Provinces specimens ranging from 1.4 to 6.2, the Madras specimens ranging from 1.5 to 14.9, and Bombay ranging from 5.3 to 10.5. One Madura specimen yielded 14.9 per cent. of the resinous extract, another 11.9, and a third 10.3. A specimen from Koorovin, in Madras, gave 12 per cent., and one from Pencoonda, in Bellary taluk, 10.1 (Dr. Macnamara's Report, No. 71, dated 11th June 1872.) A sample purchased in the Calcutta market and examined by Ráy Kanai Lall Dey, Bahádur, yielded 10.63 per cent. of extract. But Dr. O'Shaughnessy says that ganja "yields to alcohol 20 per cent. of resinous extract." This disparity is to some extent, I presume, due to the experiments having been limited to the preparation of an alcoholic extract, and the alcohol taking up more or less of other vegetable matter besides the cannabin resin, and the age of the specimen affecting the result of the experiments. It is obvious that in fresh specimens there must be a larger quantity of chlorophylle or green coloring matter than in old specimens, in which it is decayed or decomposed; and as in its sound state the colouring matter is soluble in alcohol, it necessarily produces different results according to the age of the specimens operated upon. In Dr. Kanai Lall Dey's experiments, while ganja yielded 10.63 per cent. of extract, bhang yielded from 7.5 to 8.79 per cent.; but the narcotic effect of the latter was as one to three of the former, showing clearly that the resin, on which alone the narcotic power depends, present in the leaf extract was two-thirds less, and the rest of the extract was made up of chlorophylle and other inert substances. Further and more detailed experiments are necessary before this question can be satisfactorily solved. It is indisputable, however, that climate and culture have considerable influence in producing the resin, and its quantity must vary according to circumstances.

Among ganja-smokers opinion varies very considerably as to the narcotic effects of the different varieties of ganja sold in the markets. Those who are in the habit of using flat ganja will not, if they can help it, touch round ganja, while those who are accustomed to the round sort will not relish the flat drug. In Beerbhoom, a round-ganja consuming district, a wholesale goládár of 25 years' standing said to me, when I was there in January last, that the consumers thought the flat ganja to be full of leaves, which did not exist in the round kind, and that it was stronger in respect to narcotic powers and caused burning

burning of the eyes. At Bhagulpore, where flat ganja alone is imported, I was told that the hemp-smokers considered the round sort to possess greater narcotic powers than the flat kind, and that they would not therefore smoke that sort of drug. In Monghyr, also a flat-ganja importing zillah, I was told that the consumers could not smoke the round sort on account its greater narcotic power. These opinions, I need hardly say, are of no value, formed as they are by men biassed by old habits and prejudices.

24. The leaves of common European hemp have been submitted to careful analysis by Tscheepe, by Schlesinger, by Kane, and by Bohlig, and the results show that they comprise chlorophylle, gluten, phosphate of lime, brown extractive matter, sweetish bitter ditto, lignum, soluble albumen, and salts of ammonia, potash, lime, and magnesia, alumina, and silica. The leaves of the Indian hemp have never been thoroughly examined, but they probably contain the same constituents, with the addition of a variable quantity of cannabin. According to Bucholz, the seeds of European hemp contain fixed oil 19.1, resin 1.6, sugar with extractive 1.6, gummy extract 9.0, soluble albumen 24.7, woody fibre 5.0, and husk 38.3. The seeds of Indian ganja have never been examined, but they contain a much larger percentage of fixed oil. By the ordinary modes of extraction in a mill as much as 25 to 30 per cent. of it is easily obtained.

25. In Bengal the seeds are used for making a bland, fixed oil, which is tolerably well adapted for lamps; it is also employed for adulteration with mustard oil. In Rajshahye the seeds are baked and eaten as an article of food, but not very extensively. In Europe they are used to feed cage-birds. The hemp-seed oil is extensively employed for a variety of purposes: for lamps, soap-making, paints, and varnishes. It has an acrid odour, but mild taste. The wood is used for fuel only, and the bark in Bengal is thrown away. But on the Himalaya, especially in Káshmir, Gurhwal, and Sermur, the natives manufacture from its fibres of various qualities, fishing nets, cordage called *sels* for crossing rivers, coarse stuffs for rice-bags, and bhangela and ganjeli garments for summer wear, and shoes with or without leather soles.

26. The most important products of the hemp in India are its leaves, flowers, and resin; all used as intoxicating drugs. The leaves are known under the different names of *bhang*, *siddhi*, *patti*, and *sabji*, and form a most important article of trade. In some official reports the words are so used as to imply different articles, but they are really synonyms of one and the same substance. They are consumed in a variety of ways, the most common form being an emulsion. The dried leaves are repeatedly washed to remove the green colouring matter, then pounded into a fine paste with a few grains of aniseed (*Anithum sowa*), diluted with water, and drunk as a refreshing draught. The quantity taken at a time varies from half to five tolas of the dried leaves. Dried rose leaves pounded, black-pepper, rose-water, and sugar are added to the draught, according to taste. To the uninitiated a draught of a tola is enough to produce strong intoxication with a tendency to laughter, great thirst, and constriction of the throat, followed by a peculiar sensation of everything tumbling upside down and protracted sleep. But those who are accustomed to the drink feel nothing beyond a pleasant sensation of intoxication, with a more or less obliviousness of all mundane cares. The effect, however, varies greatly according to constitution and temperament. In Bengal this drink was at one time very popular everywhere, the rich and the poor, men and women, alike indulging in it; but of late it has fallen into desuetude. But on the last day of the Durgá Pujá it is religiously offered to every guest and member of the family, and those who do not like to take it put a drop of it on their tongue, by way of acceptance. In the North-Western Provinces the use of the draught is common everywhere, and, like tobacco, is nowhere held to be reprehensible, or in any way discreditable. The habitual use of this drink produces no perceptible ill effects on the human system; it is recommended to persons suffering from long-protracted chronic diarrhœa, who find it very efficacious in checking their complaints.

Boiled with ghee over water, the leaves part with a portion of their peculiar resin to the ghee, which floats on the water in the form of a green jelly. A



portion of this jelly mixed with dried milk and syrup over a fire produces a paste which readily hardens when cooled, and it is then cut into small tablets; this is called *májun* or *májum*, which is a favourite form of taking the drug. It is used only by the dissolute for exciting their animal propensities. The draught aforesaid is believed to be not so effectual in this respect as the combit. The dried leaves in powder are also mixed with a variety of stimulating spices and made into different kinds of conserves, which are reckoned to be highly aphrodisiacal. The Mahomedans of Northern India make a conserve called *barsh*, which is greatly prized as an excitant. In an edict of Napoleon Bonaparte, issued when he was in Egypt, it appears that in that country a liquor was distilled from the leaves. It says, "La distillation de la liqueur de *hachich* est prohibée dans toute l'Égypte; les portes des cafés, des maisons publiques ou particulières dans lesquelles on en distribueroit seront murées, les propriétaires arrêtés et détenus pendant trois mois dans une maison de force." But I have not been able to obtain any detailed account of this liquor. I have seen mention made of the use of the leaves for smoking in several books, but I believe the statement in every case to be incorrect, resulting in a confused idea of the distinction between the *siddhi*, the *charas*, and the *ganja*.

27. *Charas*, from the Persian *آز*, is the name of the resin which naturally exudes from the flowers and leaves of the Indian hemp plant. It occurs in brownish-black grains or masses, and has a strong, but not very disagreeable, resinous smell. It is collected

Use of *Charas*.

on the Himalaya, in Nepal and Tibet, and also in Cabul, Bokhara, and Hirat. The Hirati *charas* is said to be the most potent; it comes in the form of a thick, treacle-like, deep-brown fluid. It is only used for smoking, never for any medicinal purposes. The mode of smoking the drug is to put a few drops (10 to 15) of the fluid, or to mix about 10 grains of the resin in powder with prepared tobacco—a paste of tobacco and molasses—and to smoke the mixture through an ordinary hubble-bubble. The smaller the pipe of the smoking apparatus the better, as it prevents the fume from cooling and depositing its narcotic essence in the pipe. The rule is to have three whiffs at a time, and the effect thereof is instantaneous. Before the hubble-bubble can be replaced on its stand, the head of the smoker is quite giddy, and at times, if he be a new smoker, he is ready to fall down drunk; but the effect does not last long. While the intoxication from the *siddhi* lasts for 12 to 14 hours, that from the *charas* vanishes in an hour or two. Habitual *ganja* smokers take *charas* frequently to whip up the effect of *ganja*. In a person unaccustomed to narcotics, the first use may produce injurious effects; but after the habit is once formed, it does no permanent harm to the constitution. Its want never causes any longing or uneasiness.

28. As already described, the flowers of the female plant produce *ganja*.

Use of *Ganja*.

Like the last, it is used only for intoxication, and that in only one form, *i.e.*, smoking. From 25 to 30 grains of the flowers are carefully separated from the leaves, stalks, and seeds, well-mixed with dry tobacco leaves on the palm of the left hand, and then placed in a small bowl over a thin layer of prepared tobacco, and smoked through a small hookah. Its effect, like that of *charas*, is instantaneous, and three whiffs are enough to keep even a habitual smoker dizzy for some time. The intoxication lasts for several hours. Though the quantity of the resin contained in the *ganja* is much smaller than the quantity of the *charas* (which is pure resin) consumed at a time, the effect in the former case is many fold greater; and all the evil effects of hemp-smoking, which caused such widespread mischief, are due solely to *ganja*. No narcotic used by man is nearly so deleterious and permanently injurious to the constitution as this baneful drug, which has been most aptly described as an "*ordure révoltante*."

29. It has been already stated that the hemp plant in the wild state grows all over India, and that there is scarcely a province

Locale of cultivation.

in which it is not to be met with. In the provinces under the Lieutenant-Governorship of Bengal, Shahabad, Chumparun, Monghyr, and Bhagulpore, particularly the two last, are noted for the luxurious and extensive growth of the wild plant. People there collect its leaves in large quantities, cure them, and supply all the Bengal markets with *siddhi*. The plants are cut and used as fuel, but no attempt is made to utilize the bark. Owing to the

the fact of the male plants not being destroyed, the flowers run into seed, and no ganja can be prepared from them. In some parts of Dacca, Patna, and in the Tributary Mehals of Chota Nagpore, small fields have been met with where the hemp is regularly cultivated, but the object in such cases is its leaves; no ganja is produced in any of those places.

30. In the Gurjats of Orissa ganja is prepared in small quantities, and from this circumstance I am disposed to believe that the people there know the peculiar habits of the two sexes of the plant, and assist nature by removing the male plants from their fields, though I have no positive information before me to support my opinion. If the ganja-bearing plant be a distinct variety or species, the plant common in the Gurjats belongs to it.

31. In the North-Western Provinces, Mozufferpore, Bareilly, Jaloun, Budaon, North Western Provinces, Central Moradabad, Gurhwal, Kumaon, Goruckpore, and the Provinces, Bombay, and Madras. Terai are the principal places where ganja is grown for commerce. In the Central Provinces all the three drugs, siddhi, charas, and ganja, are, I am told, largely produced. In the Bombay Presidency, Sholapore, Ahmednugrur, and Khandeish are the only place whose names have come to my knowledge in connection with the drug. But in Madras it is extensively cultivated, and Vizagapatam, Salem, Tanjore, Madura, Nellore, Arcot, Coimbatore, Kurnaul, Bellary, and several other places are noted for it.

32. In Bengal formerly the district of Jessore was celebrated for its ganja, and large quantities of the drug were prepared there for the consumption of the people of the province. The quality of the drug as prepared there was also held in high estimation by ganja-smokers, and several popular songs are still current in which it is highly extolled. The mode of curing ganja there was peculiar. The floral spikes were rolled on a mat so as to make the florets adhere to each other and assume a long tapering cylindrical form; and to this day that form, though made elsewhere, bears the popular name of "Jessori ganja;" in official records it is called "round ganja." The three pergunnahs there most noted for it are Ramchunderpore, Taragonia, and Syudpur.

Mr. Westland, in his report on the district of Jessore, gives the following information with regard to the ganja cultivation in that zillah as it existed in the year 1809:—

"The exciseable drugs consumed in Jessore were maddat, ganja, sabji, bhang, majum, bakar, charas. Ganja was largely cultivated within the district, principally about Keshubpore, in pergunnahs Ramchunderpore and Taragonia, but also to a small extent in the north-western corner. The duty was collected upon it at the time of its purchase or export from the producing districts, of which Jessore was then a principal one. The Collector, writing in 1809, estimates that 50,000 or 60,000 maunds are prepared within the district, and are brought up from January to April by byaparis (or traders) at Keshubpore, Fakirhaut, Noapara, and Kooshtea, the price being then about Rs. 4 or Rs. 5 per maund (B. 21-11-92; C. 3-5-00, 17-4-06, 25-4-09.)

"There was some difficulty in collecting the tax in the manner just mentioned, for the byaparis might come, make their whole transaction in a single night, and clandestinely export large quantities of ganja without paying tax. The collector proposed to remedy this by making ganja a monopoly, but this was not consented to. He also wished to make the byaparis pay a license tax, but the Board was opposed to this also (C. 25-4-09; 1-6-09)."

The records of the Board confirm the above information, and also show that the cultivation of the narcotic, though now totally suppressed, was flourishing in 1843, and was continued down to 1875, when it was stopped under orders of the Board. When and how the cultivation of the drug commenced to decline I have not been able to determine. It is said that the oppression of the zemindars and the interference of Government officers led to the cultivation being given up.

33. From Jessore it was carried to the north of the Ganges. According to tradition, as communicated to me by some of the oldest inhabitants of Nowgong, it was about the year 1127 B.S. (=1722 A.D.) that the narcotic was for the first time cultivated in the village of Bálubhorá, in the district of Bogra, and in that of Murádpur, in Rajshahye, which adjoins it, the seeds having been imported from Kushtea, where there



were shops for the sale of the drug. The cultivation, proving remunerative, was gradually extended to several other villages. How far this is correct I cannot verify. There is one fact, however, which is peculiarly suggestive in this respect, and that is, that to this day some of the Calcutta wholesale dealers bring skilled labourers from Jessore to Nowgong for the purpose of preparing the round ganja, and I have ascertained that some six years ago five to six hundred labourers used to be imported to the Ganja Mahal from that district for the preparation of the round drug. It is further certain that ganja has been largely grown in Rajshahye as an article of export for only three generations, i.e. from the time of the grandfathers of the present class of cultivators.

On the whole, therefore, I think it would be safe to infer that Bogra and Rajshahye succeeded Jessore as ganja-cultivating districts.

34. Although Bogra, Dinagepore, and Rajshahye are the only districts in Bengal where ganja is now grown, it does not occur in all parts of those districts. There is only one tract of land where it is cultivated, and parts of it lie in the three districts. The headquarters of this tract is Nowgong, which is situated on the northern border of Rajshahye, about 38 miles north-east of Rampore Bauleah, as the crow flies, and almost in the centre of the tract. The whole of this tract is called *Ganja Mahal*, and it lies partly in the jurisdiction of the police station Bandaikhára, in the district of Rajshahye, partly in the jurisdiction of thanas Bádalgátchi and Adandighi, in zillah Bogra, and partly in a few villages of thana Patnitollá, in Dinagepore. The whole of this tract is included within a radius of about 16 miles, and includes an area of a little over 60,000 acres.

35. From the old records of the Ganja Supervisor's office I find that there has been considerable variation in the number of villages in which the hemp has been grown from time to time. In 1854 ganja was raised in 235 villages; 10 years afterwards the number fell to 221, and in 1874 it rose to 252, while in 1876 it fell to 190. In the same way the number of cultivators was reduced from 2,417 in 1854 to 2,118 in 1864, which number was slightly increased in 1874 to 2,161. In 1875 only 1,269 men took to cultivating the narcotic, and last year this number increased to 1,908.

36. With regard to the land under cultivation with ganja, I find that in 1856, the earliest year on record, the area occupied by it was 2,608 bigás and 10 cottás. In 1866 it was reduced to 1,399 bigás and 13 cottás. These figures have been taken from the records of the Supervisor's office, but they are, I have every reason to believe, far from being approximately correct; for in 1876, or the last year, while those records showed that only 2,113 bigás and 2 cottás of land had been grown with hemp, I found on actual measurement by three ameens that ganja had been cultivated on no less than 3,111 bigás and 9 cottás of land, or 998 bigás and 7 cottás in excess of the quantity reported by the Supervisor. That in other years there has been similar disparity between fact and figures it is but natural to infer. The fact is that the lands under hemp had never been regularly measured either by the cultivators or by the excise officers, and consequently the information given year after year about the quantity of ganja grown and that destroyed or left unsold in the cultivators' houses were merely rough guesses.

Annexed is a statement (Appendix A.) showing, according to the accounts kept in the Supervisor's office, the quantity of land annually grown with hemp from 1854 to 1876, the number of men engaged in the cultivation from year to year, and the quantity of drug yielded by each year's crop.

37. The Supervisor's office was for the first time established at Nowgong in the year 1854, and certain rules were framed for controlling the gathering of hemp crop, its storage, and its exportation. I believe at about that time also the wholesale dealers were ordered to have their warehouses for the storage of ganja registered.

Before the year 1854 the usual practice was for the purchasers of ganja, armed

armed with passes granted by the excise officers of their respective districts, to go to the cultivators of the drug and purchase from them whatever they wanted, without any interference of the excise officers. At the time of leaving the Ganja Mahal they reported to the abkaree darogah the nature of their purchases and got their passes endorsed by him.

No weighing and packing in the presence of Government officers were deemed necessary in those days.

38. I proceed now to describe the mode in which the hemp is cultivated.

Mode of cultivation. First ploughing.

The selection of lands for the growth of the hemp crop is generally made in the months of Māgh and Fālgún (latter half of January to middle of March), but the dressing of the lands does not, as a rule, commence before the month of Chait (March-April). A few persons who can afford to do so begin the dressing earlier, and in the latter part of February last I saw a commencement made in some plots in the neighbourhood of Nowgong. The sites selected are open fields on which the shadow of no large tree can fall, for shade of all kinds is held to be injurious. The first act of preparation is to plough up the land from four to ten times, according to the state of the field and the means of the person owning it. The great object of this ploughing is to free the soil of all herbage and stubble. The ploughing takes place at intervals of three or four days. In the beginning of Baisákh (April-May), or even earlier, fresh earth taken out from the surrounding ditches of the field, and, if sufficient earth cannot be had there, from some low land close by, is put on the field. This proceeding is called *bhorákátá*, and is generally done by a batch of coolies, who annually make their appearance in the ganja tract from the Purneah, Dinagepore, and other neighbouring districts. The earth is taken up with *kodalis*, and carried in *bāngis* formed of two round flat baskets suspended from a piece of split bamboo. The quantity of earth deemed necessary is a basketful over an area of about three square feet, or, as the cultivators express it, 1½ feet apart. But when the soil is good a greater width is adopted. In digging for the earth care is taken to remove only the surface mould formed of decayed vegetables and washed earth and silt, the layer below the surface being considered to be useless for the purpose of manure. It takes from eight to 10 men to dress a bigá of land in one day. A few, who cannot afford to employ hired labour, do the work themselves.

39. The next process required is what is locally called *chálíkátá*. This is

Throwing sod on the field, and surrounding it with a ridge.

invariably done by the cultivators themselves or by their permanent servants. The process consists in taking up with *kodalis* from the sides of the field under cultivation patches of sod, along with the grass and other weeds which grow in abundance on it, and to throw them on the field. The hollows caused by the digging are filled up with earth taken out of the side ditches, and the sides are raised to about 9 inches above the level of their field. This last proceeding is called the *pagárbándhá*. The labour of twelve men for a day is required for every bigá of land for these two operations. The objects of these proceedings are twofold, viz. (1) to get the grass and other weeds, which cannot necessarily be ploughed on the borders of the fields, taken up, and to act as manure by being left to rot in the centre of the field; and (2) to have fresh earth put on the sides, where also the cultivators grow hemp.

40. The next operation is to manure the field with cow-dung, but this is

Second course of ploughing and manuring.

not done everywhere. After about a week, during which time the fresh earth becomes dry and friable, the land is thoroughly ploughed up, two ploughs being sufficient for ploughing one bigá of land in course of a day. The ploughing is repeated after an interval of three to eight days. The belief is that the oftener the land is ploughed, the better is the crop. In the four months which follow, when the rains set in, the land is alternately ploughed, and a bamboo ladder (*moi*) drawn over it from four to ten times, according to the nature of the soil. The latter is a substitute for the harrow, the object being in either case the same, namely, the breaking up of clods and levelling the field. A shallow channel is also excavated, locally called *bhomor*, for the drainage of the rain-water. Towards the end of Bhádra, or the first half of

September, cow-dung and refuse and house-sweepings, which are carefully preserved throughout the year, are carried to the field in *bāngis* and thrown in little heaps of one basket-load 3 to 4½ feet apart.

41. In the last week of *Bhādra* (middle of September) or early in *Asvin*, that is, about a week or ten days after the manuring, when people see signs of having fair weather for a few days, a third course of ploughing has to be gone through, numbering from six to eight times, every two ploughings being followed by one harrowing with the ladder. Ridges are then made over the field at a regulated distance from each other, and well smoothed and beaten down with the hand.

Third course of ploughing and  
ridge-making.

42. When the fields are fully prepared by this course of dressing, the seedlings are transplanted. All the operations of the third course, ploughing, harrowing, ridge-making, and of transplantation, have to be completed in course of one and the same day, as otherwise the earth so pulverised would scarcely retain any moisture till the next day, and be unfit to receive the young plants. The ground from the commencement is well protected from the accumulation of rain-water and the growth of grass or other weeds. The number of ploughings is regulated by the nature of the soil, *khar* or clayey lands, in which hemp is occasionally grown, requiring more frequent ploughing than fields of *poli* soil or light, sandy loam, which form the majority of *ganja* beds.

Transplantation.

The seedlings at the time of transplantation are from four to five weeks old, and from 6 to 12 inches high. The smaller ones are selected for higher and drier fields, in which they are enabled to throw out their roots much quicker and easier, and grow up much faster than in low fields, the soil of which is somewhat heavy, owing to the existence in it of a greater amount of moisture which retards the growth of very tender plants. Seedlings of a smaller size than 6 inches are allowed to remain in the nursery till they get older and stronger.

The seedlings are planted out 6 to 8 inches apart from each other upon the ridges. The transplantation takes place the same day on which the seedlings are removed from the nursery. They are pulled out by the hand, and in the cool of the morning or evening of a sunny day planted out. Those seedlings which have grown up as high as 15 inches or more in the seed-beds are considered unfit for being planted out, as on being transplanted, their tops, which are necessarily heavy, droop, and they soon after wither away and die. If the transplantation is delayed beyond the first ten days of *Asvin* (about the third week of September), the crop gets stunted in its growth, and the yield of *ganja* is inadequate. If rain falls within three or four days after the transplantation, it proves injurious to the young plants, the roots of which, not having taken any hold on the soil, rot and die away. In that case a second transplantation has to be made.

The first ten days after transplantation the cultivators look upon as the most critical period, as the risk of the plants not taking root and dying during that time is great. After it the danger from sudden changes of the weather is slight. Plants dying during the period are replaced by others removed from the nursery.

43. The nursery or the seed-bed consists of a plot of high, light, sandy, loam, which the cultivator or a number of cultivators commence ploughing in the beginning of *Jaisthya* (the middle of May), or as soon as one or two showers of rain have fallen. It is ploughed three or four times each month till the end of *Srávan* (early part of August), or in the beginning of *Bhādra* (latter part of August). If the soil be light and the ground free from clods, no harrowing with the ladder is needed before the seeds are sown; but should there be clods, the *moi* has to be used. The ground should be thoroughly ploughed up and the earth pulverised very fine. The seeds are sown broadcast by the hand on a sunny day. The sowing is immediately preceded by a ploughing, and followed by a harrowing, the ladder being passed over the ground two or three times to get the seeds covered up with earth. Furrows are made

Nursery.

made

made and kept open in the nursery for the drainage of water in case of rain falling.

About four to five seers of seed are deemed necessary for a bigá of land, and a cottá of ground is taken up for a nursery if this quantity has to be sown. The seeds commence germinating on the fourth day from the day of sowing, and on the sixth or seventh day the sprouts begin to assume a green colour. During all this time a watch is kept in the nursery in order to save the seeds from being picked up and eaten by birds. A plot of land near the homestead of the cultivation is generally made available for a nursery, and the people, in order to make themselves sure of its dryness, always make it a point of using those lands only in which a tuberous-rooted, grass-like vegetable, called *muthá* (*Cyprus rotundus*, L.) grows. The growth of *muthá* is, in their opinion, a sure sign of the land being quite dry.

Seeds are not sown on either a rainy or even a cloudy day when rain is apprehended, as the wet ground rots them. Even if it rains three or four days after the seeds have been sown, most of the seeds are destroyed, as the earth gets hardened into a cake after the rain, and the germs cannot force up their way through it. In such cases a second sowing has to be resorted to, but not on the same nursery. Nurseries are never manured; they are always made in an open place, as seedlings would not grow if they were kept under shade of any kind. Nor is grass weeded out at any time after the sowing of the seeds. They are also never irrigated. The cultivators are of opinion that the growth of grass in the seed-beds is beneficial to the young plants, inasmuch as they protect the latter from the action of the wind. In some places the same plot of ground is used as a nursery for four or five years successively, after which some other plot is selected; in others the same land is used for only two years. If land fit for seed-beds be scarce in the village, a number of persons club together and grow their young plants in one bed; but in such a case the bed is partitioned off by furrows dug with a plough, and each person takes possession of a separate portion. The seedling is called *púl* and the seed-bed *púlairthál*.

44. The ridges, commonly salled *shulis*, upon which the seedlings are planted out, are usually a foot high and a foot apart from each other at base. They are 18 inches broad at the base. The field is surrounded by a ridge all round; this last stands nine inches apart from the ridges intended for plantation. Those who intend to sell the standing crop to the wholesale goládárs for the preparation of the round ganja make the ridges somewhat closer to each other than those who prepare their own drug. The object of the former is to present a closely-planted field to the eyes of the purchasers. In the latter case the aim is to have sufficient space between the ridges, so that the fields may be easily ploughed and harrowed with the ladder. Such being the case, the number of ridges on any given area must vary considerably. The form of the field also must cause marked differences in their number. Usually the direction of the ridges is breadthwise. In a field at the village of Bhabánigánti, measuring one bigá and five cottás, I counted 55 ridges, of which 20 were 130 feet; 34, 41 feet; and one 20 feet long. In another village named Fattehpur I surveyed a field belonging to one Shám Sardár, which measured 246 feet by 87 feet, containing an area of one bigá and 11 cottás, and it contained 77 ridges, of which 75 were 85 feet and only two 60 feet long. In the village of Pár Nowgong a plot measuring on an average 257 feet in length and 114 feet in breadth, containing an area of two bigás one cottá and 11 chhatáks, contained 77 ridges of an average length of 112 feet. At an average, the number of ridges per bigá may be reckoned at 49.

45. After a lapse of about three to four weeks, *i.e.* about the latter part of Asvin or the beginning of Kártik (middle and latter part of October), the fields are weeded with an instrument called *dowl*, and some 10 to 15 days after, *i.e.* about the third week of Kártik (beginning of November), the ridges are cut down with a blunt hoe, leaving untouched lumps of earth about four inches square and six inches deep round the base of each plant. This has to be done very carefully, so that the roots of the plants be not injured nor their hold on the earth weakened, and the plants rendered liable to be easily blown down. The earth produced by the cutting down of the ridges is gently loosened with a

*nirán* and kept in the trenches. Manure, consisting in some places of oil-cake only, and in others both of oil-cake and cow-dung well pulverized, is then thrown round the roots of the plants, the hand in so doing being kept under the plants and near the ground, so that none of the manure may be wasted by being blown away or retained by the leaves and branches of the plants. The earth of the broken ridges is now thrown over the manure, and the ridges are rebuilt with such additional fresh earth as may be necessary. All clods in the fresh earth are broken down with pieces of flat split bamboo, which are also used in beating down and making firm the surface of the ridges. From fear of the earth remaining in a loose state and losing all its moisture, to the detriment of the plants, only as many ridges as can be opened out, manured, and remade in one day are taken in hand at a time.

46. A couple of weeks after, *i.e.* early in Agrabáyan, the plants have to be trimmed, and this trimming is limited to the breaking down of two or three of the lowest branches. This in some places is called *gánjá-jhorá* and in others *bishpátá-bhángá*. The object of this operation is to promote the upward growth of the plants and direct all the sap to the top, on which alone the ganja grows.

47. The trenches, or the spaces between the ridges, are then ploughed twice and harrowed once; but if the soil be a little clayey and clods are seen in it, each ploughing is succeeded by a harrowing. The ladder used for this purpose is made of the proper size to suit the width of the trenches. The ploughs, too, are small, with short yokes, and the bullocks used are of small bulk. In the course of the ploughing very little of the earth in the ridges is touched, except about three inches on each side of the ridge at the bottom, which is purposely ploughed away. The dry earth on the surface of the ridge to a depth of about two or three inches is then scraped off with a *niráni*, cow-dung well pulverized strewn over the ridges, followed by equally well pulverized oil-cake; the whole is covered over with earth derived by the scraping and the ridges are again firmly beaten down with pieces of flat split bamboo. The plough and the ladder are dragged by bullocks with muzzles on, and the animals specially trained to the work, for the bullocks have to walk between the rows of plants, and, unless trained for the purpose, they are apt to injure the plants. The height and breadth of the ridges are increased by three inches, as each process of opening and closing them is gone through.

48. About the 10th of Agrabáyan or earlier, according to the forwardness of the crop, the ganja doctor, locally called the *poddár* or *parakdár*, is employed for the purpose of inspecting and examining the plants, and from that time to the middle of Paus he repeats his inspection three or four times. This inspection is invariably made in the morning, when there is no glare, so that the *poddár* may well see the filaments or stipules, by the make of which he can distinguish the male from the female plants. The plants at the time of the first inspection are about two and a half to three feet high. The second examination takes place by the middle of Agrabáyan or a little later, the third about a fortnight after, and the fourth when necessary, which is not always the case, takes place by the middle of Paus. The *poddár* stoops down to see the plants, and whenever he comes across what he calls a *mádi* plant, he breaks the stalk in the middle, and leaves it to the owner of the field to uproot and throw away. A large number of plants are thus removed, it being the impression of the ganja-growers and the *poddárs* themselves that no one can distinguish the males from the females until the plants have tolerably well advanced and attained a height of from two and a half to three feet, when the distinguishing marks commence to show themselves, and the higher the plants grow the marks become more conspicuous. The *poddár* is an indispensable person in the ganja business, and the result of the cultivation depends mainly on his care and diligence in weeding out the male plants; for, as already observed, the presence of a few *mádi* plants, or, correctly speaking, of male plants, in the field suffices to injure the entire crop, inasmuch as all the plants run into seed, and the ganja yielded by them is very inferior and scarcely saleable. I saw the existence of a great many seeds in some ganja and a few only in others, and on questioning the cultivator as to the cause of this difference was told that he had been ailing, and had not therefore been able

to

to go about the fields and rid them of every female plant after the poddár had done his work. I also know it for a fact that a poddár, however clever he might be, generally leaves behind him a few of these plants in the field, which the cultivator, who goes round his field every morning in search of the obnoxious plants, which he knows by the flowers which they now commence bearing, destroys. As a matter of fact, the destruction of the male plant is never thorough, and the presence of a few accounts for the seeds which are met with in ganja, and a good deal of which is threshed out during the manufacture of the drug. The poddár is remunerated according to the size of the field, and is fed free of charge during the days he is engaged in his examination. He generally gets Rs. 2-8 to Rs. 3-8 for examining the crop on each bigá of land, and is always paid before he completes the last picking. In former years the ganja doctors were all men from Jessore, but they have now been replaced by men of the place. In some families of ganja cultivators one of the members has learnt the poddár's business, and in such cases the fee is saved.

49. The poddár's picking or thinning out, which the cultivators term *bách*, being over, the field owner applies himself to a second Second trimming and transplantation. trimming, ridding the hemp plants of one or two of the lowest twigs, which present an unhealthy yellowish colour. This proceeding in some few instances is repeated a few days later on. Towards the end of Agraháyan, i.e. about the second week in December, or a week after, the cultivators remove some of the ganja plants from those portions of the field where they are the thickest to those parts where the poddár's operations have left a vacuum. This transplantation takes place generally in the evening, and water is poured on the roots of the newly-transplanted plants.

50. The fields, the soil of most of which, as already observed, is light sandy loam, commence assuming a dry look by the beginning of Agraháyan (latter part of November), and the cultivators commence watering them. They are irrigated in most places twice, and in some places thrice; but very high and dry lands are irrigated even for the fourth time. Some lands, either from their situation being somewhat low, or from scarcity of water, are irrigated only once; but the yields in such fields is generally small. Where two irrigations are needed, one is given in November and the other some time in Paus (December-January). It is either after the first or the second picking by the ganja doctor that the land is irrigated for the first time. Where three irrigations are needed, the land is soaked once in Agraháyan and twice in Paus. The fourth irrigation is made in Mágh, if a north-west wind blows and dries up the land.

In the case of fields, the soil of which is very clayey (*khear*) many more irrigations are required, and I have known of instances in which khear fields were in the season just passing away, irrigated as many as seven times. It is necessary to water the fields composed of this soil every 10 or 12 days, otherwise they dry up, get cakey, and crack. The growth of the ganja is very seriously impeded thereby.

51. For raising water for irrigation, two methods are followed. If the water has to be raised from a well or a very low place, a large lever is mounted on cross posts, and provided with a basket hanging by a long bamboo at one end and a large lump of earth at the other. A person standing on a platform pulls down the upright bamboo so as to dip the basket into the water, and then allows the weight at the other end of the lever to raise the water to the required height, when the basket is emptied into a vat kept ready for the purpose, wherefrom it flows to the field through narrow channels. In raising water from tanks, beels, and other receptacles of no great depth, or where the water is available close to the level of the fields, baling with bamboo baskets, each held by two men, is the most convenient process. When water has to be brought from a beel or tank lying at some distance, a drain is cut from that beel or tank to the ditch by the side of the field, where a hole is dug to receive the water. From this receptacle the water is raised by a second baling. Just sufficient water is thrown on the fields to well soak the land, but not to drown it. This work is generally done by the members of the family, assisted by the servants permanently employed; but where the cultivator has not got a sufficient number of male members in the



family nor any servant of his own, he is compelled to have recourse to hired labour.

52. A few days after the last transplantation the ridges have once again to be scraped, manured, and reformed in the way already described in paragraph 40. At this time, and indeed within a few weeks of the reaping of the harvest, the owner of the crop looks after his plants daily with a view to remove any stray so-called mádi plants that may have been accidentally left in the field.

53. At about the end of Paus, i.e., in the beginning of January, the more advanced female plants commence to flower, and in this state the crop is sometimes sold. But the flowering is not general until two weeks afterwards, and it takes nearly a month from the time before the floral spikes attain their maturity and the ganja is fully formed. The state of maturity is indicated by a brownish appearance and falling of all the larger leaves. The flower of the so-called male, but really female, hemp bears the name of *kua* or *bhua*. Probably the latter is the correct name, as it means empty or seedless, and is used to indicate all fruits besides ganja which is wanting in seed or kernel. The flower of the plants destroyed by the ganja doctor is called *phul* or flower. The flowering of the male plant commences in the month of Agraháyan (November).

54. A few wholesale dealers, in order to be early in the market, offer a tempting price to the cultivators and induce them to manufacture the drug, both round and flat, before the plants have become quite fit for the sickle. In such cases the narcotic generally turns out to be of an inferior quality, and before it is thoroughly quite dry is packed up and is exported. Being fresh, it meets with a ready sale; but if, for some reason or other, it is not sold off, it loses a great deal in weight by dryage. It is a custom with the cultivators to prepare the drug before the time and from unripe plants, should they find purchasers ready to buy it, otherwise the harvesting of ganja commences by the latter end of Mágh (second week of February) or at the beginning of Fálgún (middle of February), and is completed about the middle of March.

55. As a rule, people who intend to make flat ganja reap the crop a few days before the plants intended to be made into round ganja are cut. These plants are kept in the field in expectation of the purchasers from Calcutta and its surrounding districts, who buy up the standing crop, and prepare the round hemp through their own men and at their own expense.

56. The system of hiring out ploughs and oxen is unknown in the ganja tract, but that of clubbing together and joining in cultivating the fields belonging to each member of the club is in vogue, and is adopted in the cultivation of the hemp lands. This way of assisting each other is called *dharani*. Those who own lands, but have no ploughs and oxen, are obliged to go half shares of the produce with those who help them with the needful, and these are called *adhidars* or *adhiars*. In that case the adhidar has to do all the ploughing and harrowing at his own expense, the owner of the land having to meet the demand of the landlord from his own pocket. In all other expenses incurred for raising the crop they go half shares. When the adhidar happens to be in indigent circumstances, the field-owner also advances money for putting fresh earth on the field, for the purchase of oil cake and, if necessary, of cowdung, and for payment of the poddar's fee, half of which is recovered from the cultivator after the drug has been sold. The adhidar has to stand all the expenses of manufacturing the ganja. If the cultivation ends in the failure of the crop, the owner of the land loses the money he has paid on account of rent and his own half share of the expenses incurred; but in case of his having made an advance, he recovers the other half from the adhidar.

57. Before the passing of Act II (B.C.) of 1876 there was no legal prohibition in respect to the growth of the hemp plant, and the ganja cultivators could raise the crop without any interference of the excise officers; but since the passing of the Act the

people had for the first time this season to obtain licenses from the collectors of their respective districts before commencing business. The provisions of the law could not, of course, be strictly followed this time, inasmuch as there was some delay in explaining them to the ignorant cultivators, in obtaining from them written petitions, which, in itself, was a difficult and expensive thing with them, and in receiving licenses from the three districts of Rajshahye, Bogra, and Dinagepore. So late as November last, when the plants were about three feet high, I saw people come to the supervisor's office for licenses. It is not to be expected that the excise rules on the subject should suffice in the very first year of their operation to put down all unlicensed cultivation, but, on the whole, I think they have proved fairly successful. After a great deal of search I found only one man who had grown hemp without a license.

58. In February and March, when the ganja attains its maturity, the cultivator proceeds to make arrangements for reaping the crop and preparing the drug. His first step is to present himself to the supervisor, show him the license under which he has grown the crop, and to obtain his verbal permission to remove the crop from the field. The supervisor, or one of his amlah takes down the number of the license and grants the permission solicited.

59. The permission obtained, the cultivator has to clear a plot of grassy land for the manufacture of flat ganja; for round ganja a paddy field is preferred. It is cleared of all stubble and grass and made even with a *kodáli*. A couple of huts are then built on it for the shelter of the men who have to watch the crop, and for the accommodation of the agents of those wholesale goládárs who prepare their own ganja. I have never seen any such huts in the fields where flat ganja is manufactured, and my inquiries lead me to believe that none are made.

The place of manufacture is called *chátor*, in some places *kholá*.

60. For the manufacture of flat hemp, and where the plants have attained maturity, the cutting commences in the morning after the dew has disappeared from the ground; but in the event of the plants being prematurely reaped, the cutting takes place in the afternoon as well as in the morning. For the round ganja the plants are invariably removed from the field in the afternoon between 2 and 3 p.m.

Among the Hindu cultivators it is not usual to commence the cutting in the afternoon of a Thursday, or on any particularly unlucky day.

Among Muhammadans the sowing, the transplantation, and the reaping must all commence on a Friday, which, in their opinion, is a lucky and holy day.

In either case the entire crop is not removed from the field all at once, nor is the reaping done from day to day till all the plants are cut. A certain number of the most mature plants are selected, and so many of them are cut as can be manipulated and made into ganja in course of the day and the two following days with reference to the labour available.

In this way the reaping of the plants, which grow to a height of 3 to 8½ feet, the majority of them being about 5 feet high, goes on till it is found that there are no more plants in a fit state to be removed. If the cultivator or the agent of the wholesale goládár has other fields to look after, he starts the reaping there; if not, he waits till more plants ripen. Great care and expedition, however, are necessary in the carrying on of the manufacture, for the mature plants have to be removed from the field within three or four days after maturity, or else they wither away, and become perfectly unfit for the preparation of the narcotic. The best indication of maturity is the withering and falling off of the larger leaves. Most of the leaves at this stage become seared and yellow.

The *khásiá* or hermaphrodite plants are never touched except by mistake. They are left on the ground to wither, and are afterwards either thrown away or utilised as fuel.



61. The plants are cut with a sickle, leaving some 4 to 6 inches of the bare stalk on the ground. When some 50 or 60 plants have been cut, they are collected together and tied up in a bundle over a bamboo pole. In arranging the bundle, the heads of some plants are put on one side and of others on the other, so that the weight is evenly distributed over the pole. The bundle is carried on the shoulders of two men to the place prepared for manufacture.

Removal of crop to place of manufacture.

62. Properly ripened plants intended for the flat or *chápía* ganja, and cut about 9 o'clock in the morning, are laid out in the sun on the grass of the *chátor* till about 1 or 2 o'clock in the afternoon, when the cultivator, or one of his people sits on the *chátor*, and, taking up each plant in his hand, cuts it into lengths of 1 foot to 2 feet. The useless twigs, *i.e.* those which have not borne flowers, are now separated from the ganja-bearing branches, as also portions of the bare stalk to the length of 4 to 8 inches, all of which are thrown away. Hermaphrodites which have been removed from the field by mistake are likewise rejected as useless. At dusk the selected stalks are laid upon the grass for exposure to the dew, and the men go home. In some places the cutting of the tops does not begin until the following morning, and the plants in that case remain spread out on the *chátor* for the night.

Manufacture of flat ganja. Rejection of flowerless tops and exposure to sun and dew.

63. On the following day, about 2 o'clock in the afternoon, the men, after having had their bath and meal, appear at the *chátor*. The twigs still lie exposed in the field where they were placed last evening, and now present a withered-up appearance. These are now collected and separated into bundles of three to ten twigs, in accordance to the size and dimension of the twigs. When the twigs are small, as many as eight to ten of them are taken to form one bundle, while of well-grown and many-branched thick stems three or four are held sufficient.

Making of bundles.

64. A *darmá* mat is now spread on the ground, upon which the bundles are placed one by one in a circular form, with their tops pointing to the centre and overlapping each other. The circle formed is about 14 feet in circumference. Over this ascend four or five persons, holding each other by the shoulders and commence treading and trampling upon them. They stamp and press down the plants with their right foot, while they hold them with their left foot. The pressing is continued for three to four minutes. When the ganja assumes the required shape, a person brings two fresh bundles and puts them on the fresh layer, and repeats the operation till a complete layer is formed while the trampling goes on. When the second layer is completely pressed, a third and a fourth, and sometimes a fifth, layer is formed, until the mass rises to the height of 1 foot. In arranging the bundles care is taken to put them so as to prevent them from running into each other, and being converted into one inextricable mass. One bundle slightly slanting from its next neighbour is enough to keep them distinct. In the particular field where I watched the manufacture of flat hemp, the stack was 1 foot high and  $13\frac{1}{2}$  feet in circumference, and comprised 1,326 tops of the hemp plant. The trampers invariably make a bow to the ganja before they place their feet upon it. When the trampling of the whole mass is completed, and this takes about half an hour, the men get down, and the stack is covered with a couple of mats, upon which one or two men sit down. This procedure is called *jágdewá*. This stamping and treading under the feet is done with a view to give a flat shape to the ganja, and to force the small stipules and flowers to adhere to each other and form one mass. The resinous exudation on the ganja help this object very effectually. This process also causes the large useless leaves and seeds to fall off.

Manufacture of flat ganja; stamping.

65. About half an hour after, the men upon the stack leave their seats and the mats are taken off. A mat is now placed nearest to the stack, and another next to it. One or two men now begin removing the bundles from the stack in twos. They take them in their two hands, and, holding them over the nearest mat, beat them against each other with some force, which causes the seeds and crumpled up leaves to fall off. The bundles are then placed on the next mat in circular layers in the

Threshing and re-stamping.

same way as at first, and the treading and pressing are repeated, the top layer of the first stack being made the bottom layer of the last. About 4 p.m. the stamping ceases, and the process of covering up the stock with mats and of making one or two men sit upon it is repeated. The seeds and leaves which fall on the mat after the threshing are now gathered and taken up by one of the people in both hands, and form a height of about 4 feet, gently thrown on a mat. By this process of winnowing the leaves are blown out and the seeds deposit themselves on the mats. The seeds thus collected are carried home by the cultivator for next year's use.

66. About 20 minutes or half an hour after, three mats are placed lengthwise on the ground, one after another, and upon these the bundles from the stack are placed horizontally, and two or three men commence holding them with the left foot and pressing, and, passing the right foot from the stem to the top, they again gently retrace their steps, and resume pressing from the stalk end. As before, so now, one of the men takes up two bundles from the last formed stack, beats them against each other on a piece of mat or gunny cloth, and lays them in a single layer on the mats, each bundle being trodden upon for six or seven minutes. The bundles after being once pressed and trampled upon are turned upside down, and the process of trampling is repeated; when being turned, the plants are slightly beaten against the mats. The trampling is finished by sunset, when the bundles, which are now considerably reduced in size, being only of three or four twigs, are removed and kept in a slanting posture on the grass, and covered over with mats for the night.

67. On the following morning, shortly after sunrise, the cultivator goes to his *chátor* and proceeds to separate the twigs that have got somewhat jammed with each other in the bundles. A circular stack of these, like that of the previous day, is then made and gently trodden upon by one or two men. When the whole of the ganja has been stacked and trampled, mats are put on the same. This is called *gorá bhángá*. The men then go home for their bath and meal, returning to the *chátor* by 10 o'clock.

68. A long line of mats is then made, while one of the men uncovers the stack and, making a bow to it, ascends and stamps his feet upon it for four or five minutes. The ganja is then unstacked, and, after being collected in bundles of three or four twigs, and gently pressed by the fingers, is laid upon the mats, bundle by bundle, in two rows, with their stems out and their heads meeting and overlapping each other. At about 11 o'clock two or three or more men commence stamping these with their feet with considerable force. At about 12.30 o'clock the bundles are turned over on the mats and the stamping continued. About three-quarters of an hour after the treading ceases, and the hemp is exposed to the sun for a short time, the tramping being again resumed for a few minutes. At about two o'clock the trampers leave the mats, the twigs are now taken in hand, turned, and spread out in smaller bundles on mats and gunnies, and if these do not suffice, on grass as well. Ere the twigs are turned they are gently beaten on the mats. A few twigs having more leaves than others are kept in a standing posture in the sun. The mats are now full of dried leaves and seeds which have fallen during the process of tramping. The above process is locally called *khonchá*.

69. Shortly after two o'clock the process called *pátibhángá* is commenced upon, and one or more men stand upon the hemp now lying upon the mats, and draw their right foot, which is well pressed, from the stem to the top. The twigs are then turned over, and now, instead of the bundles, each twig is separately placed on the side of another and pressed with the right foot, while it is held down with the left foot. A little before four o'clock the twigs are gathered and arranged into bundles of 12 to 14 twigs. A large quantity of leaves, as also some seeds, fall, but a few seeds are still to be seen on the drug, which is now quite flat, all the bracts and calyces being formed into one hard mass.

70. The ganja is kept separate and the useless twigs are thrown away. Ten of these pressed tops are tied up into a bundle with strips of plantain or bamboo bark; they are removed

to the cultivator's house, where they are stacked in the yards in a circular form, the stems forming the circumference and the tops meeting in the centre; the central portion of the pile is covered with mats, the stems being left bare to dry. When the drying is complete, the drug is carried inside a room, where it is placed on bamboo platforms. Scarcely any *chúr* or *rorá* is formed from the flat or *cháptá* ganja at the time of its preparation. A few bits which detach themselves and drop off during the process of manufacture are picked up and made to adhere to the mass; a few that fall during the tying of the bundles are burnt.

The bundles in which flat ganja is sold are, in a majority of cases, tied up after the sale. This year, however, the supervisor has been insisting upon the ganja being tied up into bundles for sale before license to retain the drug is applied for and granted. This will probably be done by the growers; but I have reason to believe that the wholesale purchasers will untie them and repack them after their own way.

71. The plants intended for the round ganja are, as already stated, cut in the afternoon at about three o'clock, and carried in bundles to the *chátor* precisely in the same manner as the *cháptás*. They are then exposed to the rays of the declining sun and the dew of the succeeding night. The plants, when convenient, are also occasionally reaped in the morning.

Manufacture of round ganja;  
exposure to sun and dew.

At about eight o'clock in the following morning the people attend the *chátor* and proceed to cut the plants with sickles into sections of 1 to 1½ feet. Most of the plants are cut into from two to five pieces, while a few entire plants which have borne little or no ganja are generally rejected. A much larger quantity of bare stalks and many more useless branches are thrown away than what are usually rejected when manufacturing the flat hemp. The selected pieces are spread out in the yard in ranges to the action of the sun, with a view to render the leaves, the woody portions of the branches, as well as the clusters of flowers containing the resinous matter, a little stiff and otherwise suitable for the preparation of the ganja.

72. The people now return home, and after breakfast and an absence of about two hours come back to the scene of their labour. A little before noon mats are spread on two sides of a long bamboo bar placed horizontally on posts 4 feet high, and a number of the selected pieces is laid flat on the mats, and the men, 12 in number, ranging themselves in two rows, commence the process called *ekmalái*, or first rolling with their feet, holding the bar with both their hands for support.

First course of rolling.

In this process of *ekmalái* the feet are moved from the stalk end in the direction of the tops, rolling and pressing the pieces with considerable force. The bundles are made of 12 to 13 pieces of plant, but I saw a few much larger bundles, consisting of about 40 twigs each. Some, but not all, of the bundles are tied at the stem with a string. I was told that the more skilled labourers could manage the bundles without tying them. In the course of manipulation, or, more correctly speaking, pedipulation, the men spread out the untied bundles with their feet and the tied ones with their hands, in order to press and roll more effectually the inner portions of them. Each man presses and rolls the plants for eight or ten minutes, now and then taking the bundle up in his hand and shaking off the leaves from it. The larger bundles are trodden by two men. If the bundle recedes much from under the feet, it is generally rolled forward with the feet; it is then held fast with the left foot, and the rolling and pressing is resumed with the right foot. As each man finishes his bundle, and the plants have by this time assumed a roundish shape, it is carried to another part of the ground, and there laid out in the sun, twig by twig. The labourer gathers some 12 to 13 more plants and repeats the same operation. This is done to prevent the drying up of the juicy and resinous matter which has been squeezed out and mixed up with the narcotic-yielding portions of the plants. After an exposure to the sun of the trampled pieces for about a quarter of an hour, they are made to undergo a second trampling (*domalái*), occupying a shorter time, but precisely in the same way as before. The men then take their seats on the mats, and seizing three to

five twigs at a time, press and roll them hard with their hands. This is called *háth mutá*, which is finished in three or four minutes. This done, each twig is separated and laid on the ground by 2.30 p.m. If the people have no other work before them, the *háth mutá* is repeated after half an hour, and the plants, which have now been moulded into a round shape and deprived of most of the useless leaves, are exposed to the sun in single twigs. A little after 4 p.m. two men collect them together and tie them up in bundles of about 100 twigs: these bundles are placed on mats, and covered over with them for the night.

73. A powerful sun is an indispensable necessity in the preparation of ganja, both flat and round. The cultivators never think of cutting the plants on a cloudy day; and if after the plants have been cut clouds appear in the sky, the manufacturers light a fire and hold the sections of the plants over it for about ten minutes before commencing the rolling process. Though art supplies to a certain extent what is denied by nature, yet the benefit derived from this process is not unattended by certain evils, for the plants thus heated on fire assume an unnatural darkish colour.

Substitute for sun-drying.

74. On the following morning the half-prepared round ganja is uncovered, and at about 9 o'clock the bundles are untied and, for the purpose of drying them in the sun, laid in ranges on the ground, piece by piece. At midday they are collected together in bundles of 15 to 20 twigs, and, if sufficiently dried, gently pressed between the hands, and once or twice rolled on the mat; but if the desiccation is partial, the usual way of the *ekmalái* is had recourse to for getting rid of the superfluous leaves, which by this time get pulverised and fall off, each bundle taking in manipulation only a minute or two, and the work is finished in less than an hour.

Second course of rolling and dressing.

75. The work of tying up the ganja in bundles (*ántis*) next commences. This is called *sherbándhá*, and is done by none but skilled labourers. The Jessore coolies are particularly good hands at this work, but of late some of the local labourers have also learned the business. The head man charged with this work sits down on the mat, having on his right and left two or three unskilled assistants, who select the serviceable twigs, cut them into smaller pieces, and place them by his side, and these he classifies into long, medium, and short sizes. The smallest twigs are at first taken up and arranged, those of medium size are next arranged and placed over them, and the longest, which are the best ones, are so placed round the bundle as to conceal and cover the other twigs. The bundle is then pressed by the hand and tied with a piece of thin jute string at the stem, a portion of which is now cut off with a sickle.

Tying of bundles.

A good many twigs which have not flowered, as also those which have borne inferior flowers, together with a large quantity of the natural wood, are cut off and thrown away at this time. In short, every means is adopted and every attempt made to get as much ganja and as little of the ligneous matter as possible.

The tying of the bundles being finished, towards evening they are placed on mats in two parallel rows with their heads meeting each other and covered up with mats, and left under the weight of a bamboo for the night.

76. On the following morning, when there is no dew on the ground, the bundles are taken out, placed slantingly on mats against a piece of bamboo, and exposed to the rays of the sun till about 2 o'clock; then they are freed from any leaves that might have been left on them. The labourers, seated on mats, takes up bundle after bundle and roll it with some little force, and afterwards shake it on the mat. It is during this process that small bits of prepared ganja break in the bundle and fall off. These, or rather the best of these, are preserved and trafficked as *chúr*. The men also take the bundles up in their hands, top uppermost, pass their fingers in search of superfluous leaves, and where there are any, gently press them with their fingers, or with small bits of ganja stem four or five inches long with sharp points and reversing the position of the bundles, give them two or three strokes with their hands which

Drying the bundles and freeing them of leaves.

make the dried leaves fall on the mat. A couple of minutes suffices for working off each bundle.

Ordinarily this process completes the preparation of the ganja. Should the superfluous leaves, however, continue to stick to the drug, the last process is repeated either on the same day, after a couple of hours' drying, if there be time, or on the following day, in the afternoon.

The above two proceedings are called *pátí bhángá*.

77. When the drug is manufactured under the superintendence and at the cost of the wholesale goladars, who buy up the standing crop and prepare the drug themselves, much more care is taken, both in the selection of the plants and in the manipulation, than when the cultivators undertake the work on their own account, and the result is that there is considerable less wastage in the one case than in the other. There is, however, always, and under all circumstances, more wastage in the preparation of the round hemp than in that of the flat sort; but there is far less wastage in the preparation of the drug by the cultivators than by the goladars, inasmuch as none but the worst twigs only are rejected by the former, while the latter or their agents, take the good plants and reject the rest, and do not allow the mixture of any inferior article.

78. The ganja after the final process above stated is ready for storage, but it is not stored until the whole crop is manufactured. Logs of wood are placed on the ground and over them are arranged horizontally a few pieces of bamboo, and over them some sticks, which are generally the bare stems of ganja. Upon these are piled bundles of prepared ganja, the arrangement being almost the same as that for the stacking of the flat crop already described, with this difference, that during the day the central portions, consisting of the ganja tops, are carefully covered with thick clothes or quilts, the outer line of stem ends is left exposed to the sun to dry, while at night the whole stack is covered with darma mats. When all the manufacturing operations are completed the bundles are made into bales commonly called *bastás*, wrapped up in thatching grass, and carried to the house of the cultivator, or, when the crops of several cultivators have been manufactured by the wholesale dealer and paid for, to the house of one of the cultivators. In case of rain being expected, the drug is removed into one of the sheds erected on the *chátor*. The bundles are so carefully tied that they never get loose, though the *bastás* sometimes do.

79. When the ganja, both flat and round, belonging to any one person has been manufactured, and the drug has been properly arranged in bundles, the cultivator, or the agent of the wholesale goládár, if he has bought the standing crop and prepared the drug at his own expense, presents himself before the supervisor and applies for a licence to retain possession of it. This licence is made out in the form prescribed by the Board's rules, and, as far as I have seen, is granted without any inquiry. The drug is then either stored up or at once sold. Unfurnished with this licence, nobody can legally sell the drug.

Ordinarily the cultivator or the wholesale dealer's representative does not apply for licence until after he has closed his *chátor*; but when an intending purchaser presents himself to buy the new hemp, he makes his application to the supervisor as soon as he has finished the preparation of the drug of one entire plot of his several hemp fields, it being a general rule not to grant the licence until the crop of one entire field has been manufactured.

In previous years such application was verbally made, and the supervisor's amlah used to record the purport of it in their books; but this year, under orders received from the Rajshahye Collectorate, every ryot has had to make a written application for a licence, which is not only expensive but harassing to him.

80. Formerly the wholesale goladars of Calcutta and its surrounding districts, who had the round ganja prepared at their own cost, used also to take out the licence to store the manufactured drug in their own names; but this year a different course has been adopted. In the licences granted by the authorities of Rajshahye

to permit the cultivation of the hemp plants under Act II. (B.C.) of 1876 certain conditions have been laid down, one of these being that the growers of hemp shall not be able to sell it, even in an unprepared state (which means the standing crop), to anyone who has not procured a written permission from the Collector of Rajshahye to purchase it. The goládárs' agents, not having been at Nowgong at the time when the licenses were issued, were not aware of the existence of this condition; and when they arrived at the place in the latter end of January and on the commencement of February, they thought it would be a dilatory and troublesome affair to go to Beaulah, some 56 miles distant from Nowgong, and determined upon advancing money to the cultivators for the preparation of the round ganja and superintending the manufacture themselves, allowing the cultivators to obtain the licenses in their own names and to store the drug until the agents would obtain import passes from their respective districts, when they would remove the drug as if they had just then purchased it.

I was particularly desirous of finding out whether the supervisor caused any kind of inquiry to be instituted before granting the licenses to store the ganja, but I failed to learn that any such inquiry was made. In fact, the supervisor has not the means of making such an inquiry, as he has not men enough to go to the *chators*, or to the houses of about 2,000 men.

81. The license secured, the drug is stored in the houses of the cultivators. During my stay at Nowgong I took the supervisor with me, and visited several places used for the storage of ganja. I found it stored at every convenient nook or corner, without any care or guard. I saw a quantity of flat ganja kept in a cowshed situated in an open place and without any doors in the house of one Fakir Bakhsh. In one Piru Mandal's place I found some hemp lying in an open verandah of a room in the house. In the homestead of one Chhedor Mandal there was a large quantity of round ganja lying in an open hall of the house on planks placed on the floor. I also saw some flat hemp kept in an open room and inside a cowshed in the house of a respectable ryot named Kukur Sardár.

82. As a rule ganja is not grown under advances, but the brokers, when they find it to their interest, advance money to the growers during or after the preparation of the drug, and even at times when the crop is on the ground. These men, on hearing from their constituents of their intention to arrive at the producing district at a certain time and to buy so much and such a kind of drug, place themselves in communication with some of the cultivators, and, after settling with them the quantity to be bought and sold and its price, give them something by way of earnest-money. In such cases the prices then ruling in the market are the prices at which the bargain is struck, though the drug has to be actually bought and paid for months after. It also happens that a contract is made for the one to sell and for the other to buy at the rate prevailing in the month of Chait (March—April). Brokers also make advances on their own account, intending to make a profit by selling the drug when the market rises.

Advances are generally made to the growers of hemp in the months of December to February. Whatever advance system prevails, it does so in respect of only the flat ganja, but not of the round-shaped drug nor the *chúr*. Advances are made both to growers and *fariahs*, the latter of whom act in subordination to the brokers.

83. Under the excise rules a separate rate is fixed for the variety of ganja called *chúr*. This drug is held to be more powerful than round ganja, and therefore the duty on it is rated at four rupees, while round ganja is charged at the rate of three rupees. This variety, however, is not the produce of any particular and special mode of manufacture, but the result of the two processes described under paragraphs 64 to 78. In the process for making flat ganja, when the bundles and bales are being tied, portions of the flowers on the spikes drop down broken, and such parts of it as cannot be pressed on the spikes and made to stick thereto are kept separate; in rolling the round ganja the same breakage also occurs, and the fragments cannot conveniently be made to adhere to the rolled spikes,



so they are kept separate; and these broken bits, resulting in the course of the two processes, constitute *chúr*, which literally means "broken" or "powdered." As they consist principally of the female flowers with all their resinous matter in and on them, and includes no stalk or sticks of any kind, they contain weight for weight more narcotic matter than the flat and the round drugs, which are made up of nearly one-half of woody stalks. This *chúr* is also known under the name of *Rorá*.

84. A hemp plant will stand a moderate amount of rain after its roots have struck well, provided the rain water is not allowed to accumulate round the roots. A fine dry weather to the end of December is, however, what is most desiderated. A shower of rain in January is welcomed by the cultivators, as it saves them the trouble of having recourse to one more irrigation. But when the plants begin to flower in clusters and the resinous matter is formed, rain spoils the ganja, as has been the case this year, in consequence of too much sap running up the plants and causing new shoots to sprout between the flower bunches.

If a strong wind lowers the head of the plants at any stage of their growth, bespattering them with mud, they soon die. A violent blast sometimes uproots and prostrates the plants.

A fine sunny day is essentially necessary for the manufacture of ganja, and people will rather suffer the plants to die in the fields than think of harvesting them when the sky is overcast with clouds.

85. At the time of inflorescence the rains favour the birth of a kind of green insect called *hirkati*, which attacks and nips off the tender shoots and flowers; and a sort of green weevil called *sidlepoka*, which marks with black spots the parts of the plant attacked by it, is also injurious. I observed these sooty spots and made inquiries about them. The spider is another pest; those portions of a plant which are enveloped by its webs wither away and yield no ganja.

86. *Kharkhari* and *gorjali* are the names of two sorts of blight from which the plant is known to suffer; the one dries and crumples up the leaves, the other at first embrowns the stem and ultimately kills the whole plant.

87. Notwithstanding the repeated ploughing and manuring detailed above, ganja cannot be grown on the same field for two successive years. The produce in the second year is hardly sufficient to cover all out-goings, and in the third year it is a positive failure. The cultivators are therefore obliged to sow the same field with ganja every fourth year, devoting the fields to other crops during the interval. The ganja crop would have much improved if the people could afford to sow the same field with hemp after keeping it fallow every three years; but the rent is heavy, and the peasantry generally poor, they are therefore unable to do so as a general rule. The hemp is reaped in March and followed by jute, which in that part of the country is sown in May and harvested in October, when mustard takes its place, and leaves the field in February. Ganja land is also sown with potato, turmeric, tobacco, early rice, ginger, and other vegetables. Only those who can afford it, and their number is small, keep the land fallow during the year preceding that in which they intend to grow the hemp; but this is not common. This incessant taxing of the productive powers of the land results in deteriorating the quality and reducing the quantity of the drug. There has been of late a marked decrease in the size of the floral clusters and a deficiency in the resinous matter.

The cultivators spare no trouble and expense, and try their best to manufacture good ganja; but with an exhausted soil they cannot prevent deterioration. What they seek for is virgin soil or unreclaimed land in their neighbourhood, but this is not always available.

In the northern and western parts of the Ganja Mahal there are jungles, which the people are gradually clearing and bringing under cultivation. The narcotic in these places and in parts where the cultivation has been only recently introduced is very good; but the total area of such tracts is not large, and the poorer classes are obliged to resort to inferior lands for the cultivation of the drug. Even on virgin soil the extent of ploughing and manuring

required is by no means small. The villages lying to the east and south of Nowgong are known to grow medium and inferior ganja.

88 The majority of hemp cultivators throughout the ganja tracts are Mahomedans, and less than one-eighth of the class are Hindus, consisting of *Kaibartas*, *Nápits*, *Bhumids*, *Málákárs*, and *Jugis*. There is, however, nothing peculiar in these people which mark them as distinct from the ordinary run of the people in this part of the country. The majority of the cultivators cannot read or write, and not a single man among them keeps an account of the sums expended by him in growing the crop.

In the Ganja Mahal the weddings in the families of the hemp cultivators are, as a rule, celebrated in the months of Jeyt, Assár, and Srában, when the sale of the drug is over, and when they have paid out of the proceeds thereof the zemindar's rent.

89. Some of the hemp-growing ryots are well-to do men, who use their own capital; the rest raise the requisite money by borrowing at rates of interest varying from one-half to three-fourths of an anna per rupee, upon the pledge of their lands and ornaments, or on verbal contracts only, and pay off the debt from the sale proceeds of ganja.

It sometimes happens that a few imprudent men assign away their entire future crop of hemp on receipt of a loan of money. They sell the crop on the creditor's account, and make over to him the sale proceeds. There are instances in which ganja brokers make advances to the growers from time to time, and give them clothes on holidays, and in return take from them all that the drug prepared by them fetches. I have also been told of cases in which the creditors, besides getting back the money lent, have been allowed to enjoy a half or one-fourth share of the profits of the sale. The profit realised by the grower of hemp on a bigá of land varies from Rs. 25 to Rs. 50.

90. It is difficult to form a correct estimate of the cost of cultivating a bigá of land with hemp and of preparing the ganja, as some works are done by hired labour, while others are performed by regular servants of the house, who are employed throughout the year, supplemented by the labour of the male members of the family. In respect of the cultivation, the peasant is out of pocket by about Rs. 22 per bigá on account of the following expenses :—

	<i>Rs. a. p.</i>
Putting fresh earth on the ganja field - - - - -	4 - -
Oil-cake - - - - -	5 - -
Fee of the ganja doctor, including his feed - - - - -	3 6 -
Irrigating charges - - - - -	6 - -
Rent - - - - -	3 8 -
TOTAL - - - - - <i>Rs.</i>	21 14 -

To these have to be added the wages of the servants of the house, the value of the labour of the members of the family themselves, the hire of the plough as prevailing in other villages in the district, as well as the price of the cow-dung; all of which taken together, would come to Rs. 50 or Rs. 60. The true cost of cultivation may therefore be stated in round numbers to vary from Rs. 50 to Rs. 60 per bigá. The rent referred to above is an average; there is no special rate for ganja land, but the prevailing rate for other rich crops applies to it.

91. The cost of manufacturing the ganja is generally about Rs. 2-8, and does not exceed Rs. 3-8 per maund, if the work is done by hired labour; but in many places the drug is prepared by the male members of the family themselves, assisted by their regular servants and relatives.

When the standing crop is bought up for the manufacture of flat ganja, the wholesale goládárs' agents, who do not work themselves, have to spend about Rs. 4 for the preparation of every maund of ganja.



92. The cost of preparing round hemp is considerably greater than that of the flat sort, on account of the skilled labour required for its manipulation and the greater amount of care and time necessary in its preparation. The expense in this case is, however, defrayed more frequently by the agents, on account of the wholesale goládárs, who buy up the standing crop; and as they keep regular accounts, it is not so difficult to come to the amount of money laid out for the purpose. I give below the expenses actually incurred by one of the wholesale goládárs of Calcutta last year in preparing 195 maunds and 30 seers of the drug:—

Cost of the manufacture of ganja: (b) Round.

	Rs.	a.	p.
Standing crop - - - - -	2,826	14	-
Wages of local labourers - - - - -	1,438	12	6
Wages of Jessore coolies - - - - -	240	-	-
Lodging expenses of the agents, &c. - - - - -	180	8	6
Petty charges, such as purchase of mats, oil, jute, &c. - - - - -	164	2	-
Wages of gomáshítás - - - - -	541	7	6
Charges for cashing note - - - - -	46	6	-
<b>TOTAL - - - - - Rs.</b>	<b>5,438</b>	<b>2</b>	<b>6</b>

This shows that the cost of preparing each maund of the round ganja, exclusive of the value of the green plants, was Rs. 13-5-3, and inclusive of that item, Rs. 27-12-3.

The cost to another goládár of manufacturing 224 maunds of round ganja was as follows:—

	Rs.	a.	p.
Green plants - - - - -	3,125	7	6
Local labour - - - - -	2,017	13	9
Jessore labour - - - - -	195	8	-
Petty charges - - - - -	174	15	6
Wages of agents, &c. - - - - -	206	15	3
Feeding expenses of the agents, &c. - - - - -	112	3	9
Charges for cashing notes - - - - -	102	1	3
<b>TOTAL - - - - - Rs.</b>	<b>5,935</b>	<b>1</b>	<b>3</b>

In this case the total charge was Rs. 2-7-6 per maund, and of preparation Rs. 12-8-6. The average of the sets of figures in the two cases shows the approximate total cost of the round drug to be Rs. 27-2 per maund, and of manufacture Rs. 12-14-6.

To the cultivator who prepares his own ganja the cost is much less. He and his kinsmen and regular servants all work together, and the cost of preparing the drug is reduced to Rs. 5 or Rs. 6 per maund, exclusive of the value of his labour.

There are one or two wholesale dealers of Calcutta, who, after buying the standing crop, make over the business of manufacturing the drug to one or two Jessore men, who undertake to prepare the round hemp at the contract rate of Rs. 7 to Rs. 9 a maund.

The item for cashing notes is excessive; it amounts to nearly two per cent. on the total outlay; but the absence of bankers in the neighbourhood of the ganja mahal renders this unavoidable.

93. From the details given above of the culture and manufacture of ganja it must be evident that the weight of produce must vary greatly according to the time when note is taken of it, the kind of drug prepared, and the conditions of the soil and season of cultivation and manufacture. Leaving out of sight soil and season, it must be obvious that the whole crop of hemp grown on a given area is not utilisable for the manufacture of ganja. In the first

Produce; ratio between green plants and prepared drug difficult to ascertain.

first place, the hemp doctor's destruction of the male plants considerably reduces the total number of the plants composing a crop. Next, amidst the female plants on the field there are many non-flowering khasias or hermaphrodites, which are not heeded, and are allowed either to stand on the field after the reaping, or, when cut along with the female plants, subsequently picked out and thrown away. Then there is no fixed ratio between male and female plants in different fields, in some localities the former predominating, while in others the latter, and of these factors the number is more or less unascertainable. The ascertainment of the total number of green plants in a crop of hemp on a given plot of land is therefore of no value for any practical purpose. Inasmuch, however, as one of the points of inquiry laid down in the orders conveyed to me referred to the yield of green plants, I took notes in several fields for the settlement of the question, trying to eliminate the various sources of error in arriving at a correct estimate.

94. I examined a plot of ground under hemp belonging to one Jabandi Parámánik, which measured two bigás and three cottás. The total number of plants of all sorts were counted out, and found to be 9,254. After three plucking operations of the poddár the number was reduced to 4,725; out of these, 1,160 plants were reaped for experiment, from which again were rejected 34\* non-flowering plants, and the remaining 1,126 plants, almost fresh from the field, being weighed, came to 10 maunds 28 seers. Calculations based on these data led me to the conclusion that a bigá of land yielded 4,304 green plants of all sorts, and 2,134 green female or ganja-yielding plants, weighing 20 maunds 11 seers.

In two other experiments, in which the plants cast away at each plucking were numbered, showed that in one case the total number of green plants and the number of ganja-yielding plants on a bigá of land were 7,725 and 3,600 respectively, and in another case 6,500 and 2,915 respectively. Divers other investigations in different localities varied these figures more or less.

Taking these variations into account, and bearing in mind the fact that when a given number of plants, after several pluckings, is cut from the field for experiment they are necessarily more free from the mixture of non-ganja-yielding plants than those on the field from which they had been reaped, I have come to the conclusion that a little more than 51·6 per cent. would give very approximately the number of plants left on the field after three pluckings, and that a deduction of 15 per cent. from the last-mentioned number on account of khásiás and wastage would give very nearly the number of ganja-yielding plants. This proportion, which has been verified by several trials, gives an average per bigá of 6,667 green plants of all sorts, and 2,658 of the ganja-yielding variety, the weight of the latter in the green state being 38 maunds.

95. With a view to ascertain the total yield of prepared ganja, I took an untouched field of hemp at harvest-time and noted its area and the number of plants in the standing crop both before and after the several pluckings. A definite number of plants was reaped out of those left on the field after the hemp doctor's clearing operations, and in their green state, almost fresh from the field, they were weighed prior and subsequent to the necessary pickings that take place after the reaping; they were then cut into a certain number of pieces of the usual size, and these pieces were weighed before and after the rejection of the useless portions at the second stage of picking. The ganja prepared therefrom was then weighed, after allowing it to dry or to be exposed to the sun and dew for a given number of days. How many bundles of the usual size are made of this weighed

\* This number is extraordinarily small, and it is due perhaps to the reaping having been made with as much selection of the female plants as possible; for in other cases the number rejected from certain quantities reaped were large.

weighed drug was also noted and the bundles finally weighed. The results of two such trials are summarised belows:—

Area	Experiment No. 1 for the Flat Ganja.	Experiment No. 2 for the Round Ganja.
	Field owned by	
	Jabandi para- manik.	Sham Seriar.
	B. 2 C. 3	B. 1 C. 11
(a) Number of plants in the full crop	9,254	7,898
(b) Ditto ditto left after pluckings	4,725	3,100
(c) Ditto ditto reaped for experiment out of (b)	1,100	2,300
(d) Ditto ditto khaasias picked out of (c)	34	71
(e) Ditto ditto cut into pieces out of (c)—(d)	545	2,319
(f) Ditto ditto not cut out of (ditto)	501	—
(g) Number of pieces into which (d) were cut	3,500	4,758
	<i>Mds. S. C.</i>	<i>Mds. S. C.</i>
(A) Weight of (c)—(d) in the green state	10 29 0	40 30 0
(i) Ditto of (f) and (e)	2 20 8	15 32 8
(j) Ditto of stuff rejected and wasted in bundling (f) and (e)	0 4 8	3 15 0
(k) Ditto of ganja prepared from (f) and (e), and made into bundles	1 24 4	4 27 8
(l) Number of bundles in (k)	42 bundles.	443 bundles.
(m) Chur not weighed.		

After repeated trials the conclusions I arrive at are—*first*, that in the case of flat ganja 1,000 female green plants yield on an average 2 maunds 1 seer 6·5 chhataks of the dried plant or the prepared drug; *second*, in the case of the round ganja the same number of female green plants yield 1 maund 19 seers 12·1 chhataks of the dried drug; and *third*, that the average yield per biga of the prepared ganja of the flat sort is 5 maunds 16 seers 6·65 chhataks, and of the round sort 3 maunds 31 seers 13 27 chhataks.

96. In the experiments made I found that in respect of the flat ganja, in one cases 14 bundles weighed 14 seers 7 chhataks, in a second 6 bundles weighed 8 seers 12 chhataks, in a third 16 bundles weighed 18 seers 8 chhataks, in a fourth 120 bundles weighed 2 maunds 22 seers 8 chhataks, and in a fifth 87 bundles weighed 2 maunds and 30 seers. These figures show that 33 bundles of the dried flat ganja plant weigh one maund. To test these results and to ascertain what number of bundles is usually accepted to weigh one maund by estimate, I repaired to the supervisor's catchery and there elicited the following facts. This sort of ganja is brought there in packages each containing 20 bundles, two of them being usually estimated to weigh one maund, which supposition regulates the uniform number of bundles for making up a package; but by actual weighment, which the officer has always recourse to, I found in one case 23, in another 33, and in a third 45 bundles were required to make up a maund. The average of these three numbers coincides closely with the average determined by my other experiments. It may therefore be fairly stated that 33 bundles on an average make a maund of flat ganja by actual weighment, and 40 uniformly by estimate.

97. As regards the round ganja, in one case 443 bundles weighed 4 maunds, 27 seers, 8 chhataks; in the second 105 bundles weighed 1 maund 7 seers, and in the third 92 bundles weighed 36 seers. Working out an average from these figures, I find 95 bundles to be equivalent to a maund. This variety of the drug is generally made up in bales supposed to be one maund each; occasionally, though very seldom admitted, half-maund packages are also made up.

I examined different bales estimated to weigh one maund each, and found their contents to vary from 60, 80, to 100 bundles. By actual weighment packages of 60 bundles required in different cases to be increased to 90, 100, 105, and 110 bundles to weigh one maund; those of 80 bundles to be increased to 83, 84, 85, 92, 93, and even 113 bundles; and those of 100 bundles to 102, 103, 110, and 111 bundles.

The average of the several averages of the above figures gives 80 as the number of bundles representing a maund of round ganja by estimate, and 95 as the number of bundles making up the same weight by actual weighment. This last-mentioned figure also coincides very closely with the number determined by other experiments.

98. With a view to determine the relative proportion of the total yield of the

Yield of the round ganja in a given year.

1873-74, 1874-75, and 1875-76, and found

Round Ganja.		
1873-74 :		
Exported - -	Mds. S.	Mds. S.
Left unsold - -	1,508 22	
	209 19	1,718 1
1874-75 :		
Exported - -	1,027 0	Mds. S.
Left unsold - -	85 10	
		1,712 10
1875-76 :		
Exported - -	1,397 34	Mds. S.
Left unsold - -	1,135 32	
		2,533 26

prepared ganja of the two sorts in any given year, I referred to official returns of the year 1873-74, 1874-75, and 1875-76, and found that the exports and the quantities left in the cultivators' godowns in each of those years to be as stated on the margin. The average of these figures is 1,987 maunds 39 seers per year. Now, having ascertained that 1,000 female green plants and a bigá of land yield respectively 1 maund 19 seers 12·1 chhatáks and 3 maunds 38 seers 13·27 chhatáks of this sort of ganja, I find the number of female plants required to yield the said average, 1,987 maunds and 39 seers of ganja, to be 1,330,737, and the area necessary for the cultivation of the said number of plants 500 bigás 13 cottás.

99. The table given on the margin of the of the total quantity of flat ganja

Ditto of flat ganja.

per year. This quantity would require, at the rate calculated in paragraph 94,

Flat Ganja.			
Year.	Export.	Quantity left unsold in the Collector's Houses.	TOTAL.
	Mds. S. C.	Mds. S. C.	Mds. S. C.
1873-74 . -	8,703 36 11	759 39 0	9,463 35 11
1874-75 . -	8,908 37 4½	78 20 0	8,987 17 4½
1875-76 . -	7,419 26 14½	660 38 0	8,080 24 14½
		Average - - -	8,843 39 4½

of 5 maunds 16 seers 6·65 chhatáks per bigá of standard measurement, an area of 1,634 bigás 12 cottás and 9 chhatáks. Adding to this the probable area for the drug, I make a total of 2,135 bigás 5 cottás. To this, however, has to be added a sufficient area for about 5 to 20 maunds

of chúr, which may be

Year.	B. C.
1873-74 - -	2,407 19
1874-75 - -	2,278 24
1875-76 - -	1,290 2
Total - - -	5,977 5
Average - - -	1,992 6

roughly set down at 5 bigás, and another 137 bigás and 9 cottás for dryage and wastage, making a grand total of 2,277 bigás 14 cottás. The reported total of area cultivated during the past three years under notice, as shown on the margin, gives an average of 1,992 bigas 6 cottas, showing a difference of 285 bigas and 8 cottas.

100. The figures above given show a relative proportion of the flat ganja to

Relative proportion of the two kinds of ganja.

the round drug as 2 to 7 or 1 to 3·5. Now, the total area of the ganja fields of Nowgong actually under cultivation in 1876-77, as determined by me by careful survey, was 3,111 bigas, which ought to produce a total of 2,07,41,037 green plants; and deducting therefrom 60·132 per cent. of non-productive plants (males and khasias), we have a total of 82,69,038 female plants fit for producing ganja. Of these, two-sevenths, or 23,62,582 plants, devoted to round ganja would yield 3,529 maunds 19 seers of the prepared drug; the remainder, devoted to the flat drug, would produce 12,020 maunds 22 seers, making a total of 15,550 maunds. The total area reported as under hemp was 1,290 bigas 2 cottas; and this, devoting two-sevenths of the round hemp, would show an area of 368 bigas 12 cottas, and a yield of 1,463-24 maunds five-sevenths, and for flat ganja an area of 921 bigas 10 cottas, and a yield of 4,985-20-12 maunds, or a total yield of 6,449-4 maunds. The actual yield was 6,496-29 maunds, or only a

few maunds above what would have been reasonably expected. The causes of this difference will be referred to in a subsequent paragraph.

101. In the ordinary course of ganja cultivation seeds are rarely bought and sold. The cultivator carefully preserves the seeds which drop from the plants at the time of the manufacture of the narcotic, and these ordinarily supply all his requirements. Seeds are kept either in a basket or in an earthen pot. When a cultivator has more seeds than he requires, and this is not unusual, he either gives them away free of charge to his relatives and neighbours, or sells them to those who begin the cultivation for the first time, or who require more seeds than they have been been to secure. A portion of the seeds is sold to oilmen, who extract oil therefrom and mix it with mustard oil. I have not been able to collect sufficient data to give even a rough estimate of the quantity so sold, but it is small. Ganja seeds are also occasionally baked and eaten like parched rice.

Seeds are sold very cheap, being at the rate of three to four annas per *don*, which is equal to three seers.

Seedlings are also occasionally sold at the rate of four small bundles for the rupee. Roughly estimated, young plants worth two rupees suffice for a biga of land.

Cowdung is occasionally bought and sold for manuring the hemp fields; generally 16 basketsful of it are purchased for the rupee; it is also sold in heaps, the price being fixed with reference to their size.

The bare stalks of the ganja plants, the hermaphrodite plants, and portions of the plants which are rejected, as also the leaves, are burnt down on the *chators* of flat hemp, but they are utilised in the *kholas* of round ganja, where some of the men stop during the night, and where fires are kept after dark.

102. It has been already stated that on the completion of the manufacture both of the flat and round drug a license under Clause 3, Section 17, of Board's rules for cultivation, storage, transport, and sale of ganja is applied for and obtained from the supervisor, after which it is either sold at once from the *chator* or removed for storage to the cultivator's house. In the case of flat hemp the license is invariably granted to the person who has grown the crop; but, in the case of the round sort, it is given, according to circumstances, either to the cultivator or to the wholesale goladar or his agent, who has purchased the standing crop and prepared the ganja at his own expense.

The contract for the sale of flat ganja, and also of the round drug when prepared by the cultivators on their own account, is made soon after the completion of the manufacture, and not unoften, as already stated in paragraphs 82 and 89, long before; but the delivery is not made all in a lump, but in driblets, according to the means and requirements of the purchasers, the transaction spreading over a twelvemonth or more. The stock therefore remains with the cultivators. Sometimes, but rarely, even contracts are not made immediately after the completion of the manufacture. As a portion of the drug covered by the license is sold or delivered, the purchaser is made to fill up columns 1, 2, 3, and 4, and the supervisor column 5 of that record, and this is done as each delivery is effected; and when all the drug has been given out, the document is returned to the supervisor and filed in his office.

The sale of ganja is not always made for ready cash. Indeed, in the majority of sales, only part payments are made, and the balance promised to be paid on a subsequent date; but in many cases the debt thus left behind by the dealers is not entirely discharged. As a rule, the cultivator sells his drug to the wholesale dealer's agent on the guarantee of the broker, and in some instances he sells it to the broker without ever seeing the face of the actual purchaser; but when the time of making the promised payment comes, the brokers declare that they had not received money from their constituents, and consequently cannot pay the ryots. Sometimes the brokers pay them something once or twice, but the balance in full is rarely paid. At times the brokers have been known to go to the goladars' houses, or to send their people to them for money due by them, and thereby realise a portion of the price of the narcotic, but that portion is rarely paid to the growers. No formal document is executed by either

either the brokers in favour of the growers, or by the purchasers in favour of the brokers. A short account, something like a *hath-chitta*, on a loose piece of paper, is left by them with the brokers, and that is all. I have known of instances in which a few intelligent and well-to-do brokers had sued some of the goladars in the civil courts; but everyone cannot afford to do that, and as for ryots, they are perfectly helpless; all that they do as a means of realising their dues is to lay the matter before the zemindar; but they soon find out that, while the landlord's pockets have been lined, their position is not at all improved.

Oftentimes a wholesale dealer in ganja finds another way of cheating the ryots, and that is by making the payment in kind. They send or bring with them clothes, shawls, brass and bell-metal utensils, *sitalpâti* mats, fans, &c., and these they give to the cultivators in lieu of cash for prices much greater than their ordinary value. The ryots, instead of losing all, prefer to accept anything they get.

Goladars, actually owing hundreds of rupees to a broker or cultivator would, without the least hesitation and without the least qualm of conscience, come to another broker, and through him purchase and take away his supply of flat ganja, and this time, too, on credit. Dealers who are notorious bad paymasters are welcomed by the cultivators, and accommodated, from the fear of not at all finding a purchaser for the produce of their fields.

In short, the system on which the ganja trade is based is so unsound that one broker, named Quazî Ekîmûllah, has to get no less than 10,000 rupees from some of the wholesale goladars, and taking the debt owing to all the ganja-growing tenantry, I estimate the sum at more than 57,000 rupees. There are a number of Mussulmans, all inhabitants of Kushtea, in the district of Nuddea, who own registered warehouses at Kushtea, Monghyr, and Bhagulpore, and who are notorious bad paymasters, and there are others beside them who cheat the ryots in a lesser or greater degree. Of course all the bad ganja is sold to these men, and that, too, at prices somewhat higher than those ruling in the market. The ryots at the time think in their minds that they have got rid of an unmarketable stuff, but they regret the transaction afterwards.

103. The consequence of granting licenses to goladars for the round drug is not unoften very hurtful to the cultivators, for if the wholesale dealer fails to remove any portion of the prepared narcotic within a short time, the cultivator, though the custodian of the article, for it is left in his house, cannot sell it, the license to store and sell the same being in the name and in the actual possession of the wholesale dealer or his agent. In such a case the cultivator, strictly speaking, retains the drug without a license, and is often pounced upon by the police, sent in to the courts for trial for having in possession ganja without a license, and convicted. When I was encamped at Nowgong a number of the ignorant ganja growers were, on the above grounds, prosecuted by the police and subsequently fined at Bogra. Had the supervisor been mindful of his duties, and been constantly on the move in the hemp mahal, he would have found out these irregular practices himself, and remedied them. The goladars and their agents do not stay at Nowgong all the year round; they go away to their houses, or their principals' places, with the licenses, returning only to Nowgong at times when they want to remove an instalment of the drug, and consequently they are at times beyond the reach of the ryots. It is true that these dealers when leaving the place inform the supervisor of their having left so much narcotic in such-and-such ryot's house, but that does not shield the latter from a criminal prosecution, and from subsequent punishment. I am aware of a few cases which occurred in Bogra in only February last, in which the supervisor deposed to the drug found in the houses of the ryots being protected by proper licenses taken away by the goladar's agent; but the court thought that that was not enough, and found the men guilty.

In those cases in which the drug, though prepared by the dealers, is covered by the licenses which have been taken out in the names of the cultivators, such consequences are always avoided; and when they find that the goladars have not paid for and removed the drug in time, they find themselves compelled to sell it to others, thereby making the party who had prepared the ganja at

his own expense a loser. To guard against this the dealer generally induces the cultivator to consent to the license being taken in the dealer's name, and having once got it, he retains the same with him, even when he is away from the district. It may be said that the goládárs, having purchased the plants and manufactured the drug at their own expense, should store the drug on their own account, or remove it at once to their respective registered warehouses; but, as a rule, the class of men who deal in hemp are too poor to pay the value of the standing crop all at once, and at the same time incur the expense of manufacturing the drug; and as the ryots will not, naturally, allow them to remove the narcotic, or, at least, the entire quantity of it, without at first getting paid for it, they are obliged to keep it in the house of no other but the cultivator from whom they have bought the green plants. It is in the power of the local excise officers to put a stop to this practice; and I am of opinion that the license to store and sell the ganja should never be given to a dealer who will not agree to remove to his own custody the entire quantity of the narcotic soon after its preparation. No dealer in either sort of ganja has a place of his own in the ganja mahal for the storage of his purchase, except one man of Patna, who stores the ganja he buys in his own place.

The Collector of Bogra has kindly furnished me with a long list of cases of ganja smuggling which occurred in his district in 1876-77, the majority of which, I find, are cases of the above nature. In short, the ryots of Bogra have been so much alarmed on account of the prosecutions recently instituted by the Bogra authorities, that I apprehend many will shrink from growing the hemp in future years.

104. It has been stated in paragraph 23 that the two kinds of ganja are not held in the same estimation in different parts of the country, some preferring the flat and others the round kind. On the whole, the demand for the former kind appears to be considerably greater. The round variety is consumed principally in Calcutta and its neighbourhood. Annexed (Appendix C.) is a statement showing the places to which flat hemp is exported, and those to which the round ganja is taken.

In season 1875-76 a small quantity of round ganja was, as an experimental measure, imported into Dacca and Backergunge, while a corresponding quantity of flat hemp was taken to Beerbhoom; but in neither case did the new importations find favour with the consumers, and up to January last no material portion of these imports had been sold. I have already, in the early part of this Report, stated the views entertained by the vendors and consumers with regard to the consumption of the round stuff in a flat ganja-consuming district, and *vice versa*, and I do not think it will at all be advisable, nor does it at all seem necessary, to suppress altogether the exportation of ganja in its flat shape. This has been proposed by the Board in their letter, No. 398B., of the 7th April 1875, to the address of the Commissioners, under an impression that *chúr* ganja was surreptitiously put inside the bundles of the flat drug; but I beg leave to assure the Member in charge that this is not the case. I shall have occasion to speak on this subject more fully later on.

105. Flat ganja is sold by the ryots per maund, but this does not mean the *pacca* maund of 40 seers of 80 tolás to the seer, nor the *katchá* maund of the same number of seers, but of 60 tolás to the seer. Four or five twigs of the ganja, or as many as can be held between the thumb and the second finger, enabling the tips of both fingers with a little pressure to meet, are taken to be a bundle. Ten of these bundles are made into one larger bundle, and four of these larger ones are collected together and tied up. The weight of this last in the ganja trade is called one maund. The actual weight of this large bundle varies considerably, and five or six of them make a *pacca* maund.

106. These bundles, when sold, are brought to the house of the party who acts as a broker in the transaction, and there opened out and re-arranged into bundles containing from 20 to 28 stalks, and weighing from one and a half to two seers. Inferior ganja in very small twigs is put in first, the longer twigs, from which,

Export of the two kinds of drug.

Weighing the ganja.

Sorting of flat ganja after sale by cultivators.



which, with the exception of a portion of the bare stem, no wood has been separated, are placed outside, and the bundles are then made up.

In some places a class of men called *fariahs* make up the bundles, for which they get paid at the rate of one anna to two annas per each village maund.

107. The round hemp is generally sold either by field at a fixed valuation before manufacture, or at rates to be determined after the completion of the manufacture; the former is called *bhitá kharid*, and the latter *desáshoi*. In either case the agents of the several wholesale goladars belonging to the districts which import the round hemp commence to arrive at the ganja tract in the latter part of January for the purpose of obtaining their year's supply. Each agent is accompanied by five or six men, who act as their assistants. These agents and their subordinates get a salary ranging from 6 rupees to 17 rupees per mensem, besides all *bond fide* cost of feed. Most of these men take up their quarters at Nowgong in the house of one Madhusúdan Nandi, who has lived there for the last 17 years, and who earns his livelihood solely by lodging these men, and by writing petitions, forms, &c., for the ganja growers and traders. A few days before the ripening of the hemp crop which is to be prepared into the round ganja the agents go about the ganja fields inspecting and examining the plants ere making their purchase. Some of the goladars generally deal with the same set of cultivators year after year; but many do not do so, and choose the best fields they can get on easy terms. The fields having been selected, those (and their number is small) who purchase the standing crop at a valuation get a few of the old cultivators together and fix a price for the standing crop with reference to the probable yield of flat hemp therefrom, and the price of the same then ruling in the market. Generally speaking, this price remains unaltered to the last, and has to be paid, whatever the quality and the yield of the drug may turn out to be. But should it be found at the close of the manufacturing season that the prices fixed in this way have greatly exceeded the prices paid by others who had their purchases made on the *desashoi* principle, the cultivators, on being appealed to, do not hesitate to take off a few rupees. I know of an instance in which a cultivator thought it proper to take off four annas to the rupee upon the value fixed upon a standing crop.

The dealer who purchases the standing crop on the above system does not weigh his ganja in the place of manufacture.

108. The preliminaries as regards the purchase of round hemp under the *desashoi* principle are exactly the same as in the first case; but, after selecting their fields of ganja, the agents advance a few rupees, often two to five rupees, per field, and at no time more than 25 per cent. of the amount which the purchasers in their mind think to be the proper value of the crop. No settlement is made about the price to be paid, but an understanding is come to between the sellers and the purchasers that prices will be fixed with reference to the quantity of drug prepared, and to the price thereof prevailing in the market at the time the drug is exported. The simple and ignorant cultivator, fearing lest he may not be able to get another purchaser, or lest he may not be able to prepare the drug himself, yields his consent, and intimates to the supervisor that he has sold the hemp crop standing on his fields to such and such a person. The dealer then harvests the crop and prepares the drug himself.

Each goladar has four or five or more *chators* in all directions of the ganja tract. Each *chator* remains in charge of one of the agent's assistants and two Jessore coolies, who stop day and night in one of the huts built at the place of manufacture. The goladar's men take advantage of their compact with the growers, and cast aside a greater portion of the woody matter than is contemplated in the Board's rules, as also all the plants or branches of the plants from which inferior ganja is expected. The drug prepared by them is, therefore, necessarily better than that prepared by the cultivators themselves.

When the manufacture of the crop purchased under both the systems noted above has been completed, and licenses to retain possession of the drug have been obtained, the goladars or their people send to the warehouses a quantity of



the new ganja. Even then the price is not fixed by the *desashoi* purchasers, but they, as also the purchasers by fields, pay some more money to the ryots; and, making over to them the remaining portion of the drug, start for their respective warehouses with a supply of the new drug. The export of the new drug commences at the latter part of March.

109. No document is taken from or given to the growers, and if, as previously observed, the license be in the purchaser's name, the growers are placed entirely at the mercy of the latter. Those who can afford to pay and are honest in their dealings remove the drug in two or three instalments within six months or so, and one or two take it away and pay up the ryots to the last farthing at the time the last instalment is taken away; but others, from want of means, or from a desire to remove the drug when the market is cheap, or in order to compel the poor cultivator to reduce the price, do not remove the whole of the year's supply within even a twelve-month.

110. In fixing the price of drugs sold on the *desashoi* principle the goladars' agents resort to all kinds of tricks. They buy up one or two of the cultivators, whose standing crops purchased by them have not been so large as those of others, at a low figure by paying them a few rupees extra privately, and then insist upon that figure as the prevailing market rate, and force the other contractors to abide by it. The price thus fixed forms the basis upon which the valuations of the outturn of other fields are made. The price is generally settled whenever the last instalment is exported. A few goladars wait until it is the fag-end of the season, when the market is dull and the prices generally low. It has also happened that a few wholesale dealers, as also the ryots with whom they deal, have suffered from the mi-conduct of their agents, who, for the sake of their own gain, had prepared a larger quantity of ganja than they could reasonably expect to sell within the time the drug retains its narcotic power, and which they could pay for and remove from the cultivators' houses. Should the licenses have been made out in the names of the growers, they are compelled, late in the season, to seek other buyers, to whom they are obliged to sell at a considerable sacrifice. The expense incurred by the dealers preparing the drug necessarily goes for nothing. If it be not sold, owing to the license being in the purchaser's name, it rots in the ryots' houses, and is ultimately burnt to ashes.

The wholesale dealers also impose upon the ryots in the matter of weighing of the drug. Those who buy at a valuation do not think and have no need of weighing the drug before it is put on the scales in the supervisor's office; but the *desashoi* purchasers weigh a few packages, not the entire quantity, of the round ganja, in order to have an idea of the quantity of drug prepared by them, and with a view to the ultimate settlement of the price, and make the ryots give them 12 *paseris katcha* or 45 *pacca* seers of the narcotic in the maund.

It will thus be seen that a ryot has to suit the convenience of the purchasers in every way, and then to wait for some months before he can expect a return for his labour and capital. In the meantime the drug stored in his house may suffer from the ravages of mice or white ants, or be burnt on the cultivator's house being set on fire, which is not an unfrequent occurrence.

The loss in the latter case falls both upon the ryot and the wholesale ganja dealer; the latter loses the money expended in preparing the narcotic; the former does not get the value of the plants sold by him. Should the license be in the purchaser's name, the grower makes a demand for the price, but he rarely succeeds in getting it.

Round hemp prepared by the cultivators themselves is sold generally for cash, but also occasionally on credit; and I know of an instance in which the poor cultivator had to go to the purchaser's house, hundreds of miles away from Newgong, for his money, and had to come back with only a portion of the sum owing to him.

111. The packages or bales of round ganja referred to in paragraph 78 are made by placing the bundles in two rows with their heads meeting each other. The number of bundles put in a package or *bastá* depends upon the size of the bundles. A package is generally supposed to weigh one maund, and contains from 80 to 100 bundles. When brought to the supervisor's office it is, as a rule, found to be less than that weight, and a number of bundles have to be put in in order to make up a standard maund.

A bundle of round ganja weighs from four to six and even eight *chhatáks*, containing from 80 to 100 twigs, and a few very small ones almost approaching to *chúr*. A large-sized bundle measures about a foot in length, and as much in circumference in the centre. I have seen packages weighing one maund of 40 seers to the *tolá* containing from 80 to 150 bundles. This year the bundles in the two or three places visited by me have been made smaller, and I fancy the reduction in the size of the bundle will be the rule.

112. In the Board's Excise Report for 1870-71 the price at which *chúr* ganja is said to have been purchased from the cultivators is given at 25 rupees to 30 rupees; but I have found, on inquiry on the spot, that *chúr* ganja is rarely sold, but given away to the purchaser as his perquisite along with the drug sold, either flat or round. This is one of the reasons which in former days induced the purchasers of the standing crop to make as much *chúr* as they could.

Purchasers of the standing crop on the *desáshoi* system, finding that the *chúr* hemp could be had free of charge, would, in days gone by, make it from all the ill-grown plants which had borne only a blade or two of ganja. They would throw away all other parts except the ganja blades, and utilise them as *chúr*; but the cultivators gradually came to understand the trick played upon them, and for some years past have refused the utilisation of the inferior ganja in this way.

The above is one of the circumstances which accounts for the decrease in the exportation of *chúr*. Another circumstance which is answerable for the falling off is the increase of duty to four rupees per seer from the year 1864-65. The statement which the Collector of Rajshahye has forwarded to the Board through the Commissioner, along with his letter No. 389, of the 24th March last, shows that the export of the *chúr* hemp fell from 85 maunds and 18 seers in 1864-65 to 17 maunds and 13 seers in 1865-66, and since then, with the exception of a couple of years, there has been a steady fall in the exportation of this variety of hemp.

In former days the *chúr* was looked upon in the light of refuse of the *chator*, and all kinds of shifts were resorted to to obtain as large a quantity as was possible. But when the duty was raised to four rupees per seer people adopted measures to prevent the production of *chúr* by manipulating the drug as carefully as possible, and by retaining only the best portion of the fragments that fell during the process of manufacture, and destroying those parts which became mere powder.

Mr. D'Oyly draws the attention of the authorities to the fact that Hooghly suddenly, in 1870-71, stopped taking any *chur*, when it had in 1864-65 imported as much as eight and a half maunds. On inquiry I find that, in consequence of the inferiority of the plants purchased and the indifferent quality of the outturn made by the Hooghly goladars, there has been, in fact, very little *chur* worth taking, and what little dropped off at the time of manipulation turned out to be so poor that the goladar had it burnt on his *chator*. In Calcutta and in Beerbhoom I am aware that the little *chur* that used to be brought was not sold. In the latter place *chur* imported in 1874 had remained unsold in 1877, and, from a statement supplied to me by the Collector of Calcutta, I find that since the year 1872-73 more or less of *chur* hemp has been, year after year, burnt in the warehouses of the goladars.

In former days the Calcutta wholesale dealers used to sell large quantities of the *chur* to the serangs and khalasees of the ships bound for Mauritius.

In 1874 and 1875 the serang of the "Lalla Rookh" and the captain and chief officer of the "Nighthawk" were prosecuted for having in possession a quantity of *chur*, and were, on conviction, heavily fined. Since then the *rora* drug has not found a favourable market either in Calcutta or in the 24 pergunnahs.

It is also a fact that the consumers do not like the *chur* in consequence of its high price and its alleged less narcotic power. It is kept in a loose state inside a gunny bag, and quickly dries up, and loses its intoxicating power sooner than either the flat or the round hemp. This has been conclusively proved by the experiments made by Dr. Macnamara in 1872, in which, while the flat and the round ganja was found to contain 5.8 and 5.0 of *cannabin* respectively, the *chur* contained only 3.9. Mr. D'Oyly, in his No. 15, of the 13th January 1876, to the Commissioner of the Rajshahye Division, expresses it as his opinion that considerable quantities of the leaves that get detached during the process of manufacture are made into *chur*. I admit that a good many leaves do get detached in the way indicated by Mr. D'Oyly; but, from the inquiries I have made, I am satisfied that they are not, and cannot be, made into *chur*. The crowded flowers with bracts alone are converted into ganja, but not the leaves. I admit that a few slender twigs, which formerly would have been made into *chur*, are now put inside the bundles of round ganja; but they are only a few, and are not altogether devoid of the stalk, the absence of which produces *chur*.

*Chur* also drops from the flat as it does from the round sort, but not at the time of the manufacture. The small blades of flat hemp get detached at the time the bundles are arranged and tied, and at the time it is weighed, pressed, and packed in the office of the supervisor. Should these blades be of an inferior kind, the purchasers suffer them to be burnt; otherwise they are exported. These *churs*, like those of the round drug, do not command so ready a market as the ganja with twigs, and for precisely the same reason. It is a mistake to suppose that round hemp is ever placed inside the bundles of flat ganja; the narcotic power of both being the same, as already remarked, smokers of the flat drug will not consent to smoke the round hemp.

A large quantity of *chur* of both kinds of ganja falls inside the bales when they are tied, pressed, and packed in the supervisor's office, and by rough treatment in transit, when they are thrown upon the ground at the river ghat and at the railway stations, on carts and on boats, as also on the railway wagons.

113. Professional brokers are rarely employed in the purchase and sale of the round hemp. The drug, as already observed, is mostly prepared by and at the expense of the wholesale dealers, and a small quantity only is bought ready made. To facilitate negotiation the wholesale goladars take into their confidence one or two of the cultivators and transact all their business through them, for which they pay them a few rupees over and above the price of their standing crop. In the sale of ready-made drug brokers are employed, and paid a commission of one rupee in the maund, payable by the purchasers. The purchasers stay in their houses and allow them brokerage at the above rate, or at the rate of from one pice to half an anna to the rupee. In case of large and favourable sales the sellers make a pre-ent of a few rupees to the broker.

But a broker is essentially necessary in the trade of flat ganja. Not a blade of ganja is purchased without him, and he is the man who of all others derives the largest profit in the business. When a dealer arrives at Nowgong he goes straightway to his broker, and not unoften takes up his lodging in his house, and remains there as his guest until the hour of his departure. The broker then ascertains from him the quantity and quality of the drug he intends to buy, for there are four classes of flat drug; the best is called *aool*, the second class *doem*, the third *siam*, and the fourth *chaharam*. If the broker has a large business, and there are three or four substantial brokers in the hemp tract whose brokerage comes up to a pretty large figure, he employs one of his professional subordinates, called *fariah*, to go about in search of the drug. The purchaser, as a rule, does not accompany him, but has an easy time of it in the broker's house. The *fariah*s generally make the selection, fix the price, and communicate the same to the broker. As a rule, both of them combine together in adding a rupee or eight annas to the maund, flat hemp being always sold in trade maunds described in paragraph 105, four or five of which make one *pacca* maund, and the price is communicated to the would-be purchaser, who, as a rule, consents. The drug is then removed to the broker's place, and there kept till the entire supply has been

been gathered. The drug is then arranged in bundles and brought to the supervisor's office, either on carts, or on pack bullocks, or in boats, for the purpose of being weighed and packed.

The remuneration allowed to a broker of flat ganja varies in different parts of the hemp mahal; a few charge as much as eight annas, some four to six annas, and others two annas, per each ganja maund. In a few transactions the brokerage is charged at the rate of half an anna to the rupee paid on account of the value of the ganja, and in one instance one of the goládárs of Patna and Arrah, who annually imports some 500 maunds of ganja, pays his broker a salary of 100 rupees per annum. Besides this commission, which the *daldls* divide with the fariáhs, who get one-fourth share of it, he pockets the additional price put on the ganja, giving also a share of it to his subordinate. It is not uncommon for either the broker or the fariáh to have his own drug to sell, and upon this, too, he realises his brokerage. All brokers and fariáhs are also growers of ganja, which they, of course, sell to advantage to their constituents, and, besides what they grow themselves, always have on hand a quantity of ganja previously bought by them at cheap rates, and these, too, they dispose of to those who make their purchases through them.

The sellers occasionally pay a moiety of the brokerage, but as a rule the charge is borne by the purchasers. The former, however, make it a point of paying something to the brokers, and thereby keep them attached to their interests; for if a cultivator has ever given offence to them his chance of selling his drug is indeed very remote.

At times the brokers act as agents of the warehouse keepers, with whom they correspond and for whom they make purchases, which they either take down themselves to the dealer's place or send it to him in charge of messengers.

There are about 70 to 80 petty brokers of ganja, and the competition amongst them is so great that, with a view of inducing a wholesale purchaser to buy the hemp through them, they offer a bonus of some 30 to 40 seers on the first year of their transaction with him.

My inquiry in the ganja mahal, and amongst the largest purchasers of flat ganja outside the ganja mahal, leads me to believe that the brokers make four annas out of every rupee that passes through their hands, and they combine with the agents of the wholesale dealers to defraud their principals. Most of the goládárs are well aware of this, and a few of them have been totally ruined through the treachery of their own representatives in the hemp tract. A few of them have begun to go to Nowgong themselves, but many cannot do so, partly owing to their inability to leave the business in their warehouses in the hands of others, and partly on account of the climate of Nowgong, which is generally detested.

It would be a great advantage if the Board's rules were made applicable to the brokers, and they were made to register their names in the Collector's office and obtain licenses therefrom before they are allowed to negotiate for the purchase of the drug.

114. In transactions of round ganja the agent gets a commission of eight annas on each maund of ganja made on the *desáshoi* principle, half of which goes to his own pocket and half into the pockets of his assistants. The gomáshtá who buys up the plants at a valuation is also paid a round sum by the cultivators, not exceeding 30 rupees in 100 maunds of ganja. Besides this gain, the agent is allowed one day's wages of every coolie who has worked for 30 days.

115. The pay of a ganja coolie imported from Jessore is six to eight rupees per mensem, exclusive of his charges for diet; the head coolie receives as much as nine rupees and his food. The hire of the local coolies ranges from three to six annas per diem without diet money. The imported labourers stay night and day at the places where the hemp is manufactured, while the local men work from morning to evening. It is noteworthy that the hire of the latter is not fixed until after the completion of the manufacture, when the cultivators and the agents of the goládárs meet and settle it.

116. The procedure adopted by the wholesale purchaser is as follows: on his arrival at the ganja mahal he presents himself before the supervisor, and, after making over to him the import pass which he obtains from the excise officer or the subdivisional officer of his own place, begs to be furnished with the "anumati patra" (license in Form 31, Section 17, Clause 8, of the Board's rules for the cultivation, &c. of ganja), which the excise officer in Rajshahye forwards to the supervisor on receipt of the duplicate import pass, which is sent to him by post simultaneously with the delivery of the same to the goládár or agent. The supervisor, if the license has been received, compares it with the import pass, and, if it tallies, makes it over to the goladar or his representative, be he an agent or broker of the place. To a broker the import pass is occasionally sent by post. Thus empowered, the purchaser or his agent goes to the interior to make his purchases.

117. The purchased drug is then brought to the supervisor's office, but it is not allowed an entry into the godown until two forms, written in Bengalee, are filed in the supervisor's office. One of these forms is from the broker through whom the purchase has been made, and the other from the purchaser himself; and when there is no broker, as is generally the case with round hemp prepared by the wholesale dealers themselves, both the papers come from the purchaser. The ganja is then admitted into an open godown and kept there for a day or two, or until the supervisor is ready to weigh it.

I may here mention that Article I. of the license is never acted up to either by the supervisor or by the wholesale purchaser, and that all ganja purchased by him is not collected in one place, nor does the former fix any such place as enjoined in the license.

No officer of the supervisor's establishment watches the drug in this open place. True, peons are told off to be on the watch in the office, but the whole thing is a sham, and during the time I was encamped at Nowgong I never saw a peon watch the ganja. At night the gomastah or one of his men sometimes comes down to the godown after meals and sleeps there. Of course it does not follow that the ganja so stored is stolen from the supervisor's godown, but there is ample opportunity to do so if there be an inclination in that way.

On the day of measurement the supervisor sends for the coolies who weigh and pack up the hemp. These men are called "ganja paits," and they are told to do the needful with respect to the ganja lying in the godown. They (in all about 21 in number) live in the neighbourhood of Nowgong, and pack and unpack and weigh the drug. In the busy months they get the assistance of extra men to do the work.

Should it be the flat hemp, these people, sometimes by themselves and sometimes in the presence of one of the excise chuprasees, proceed to untie the bundles, and pick out therefrom the smaller twigs which generally happen to be within them. The bundles are then remade, separate bundles being made of the smaller twigs. This done, the men go to take their meals, after which they commence placing the package, generally made of 20 bundles, or 10 on each side, with their tops inside, on the scales in the presence of the supervisor.

Some 23 to 45 bundles, according to their sizes, make a maund, each bundle being about 2½ feet in length and about 2 feet and 10 or 11 inches in circumference, containing about 20 to 30 stalks.

As a rule the bundles of flat ganja brought to the supervisor's office for weighment and packing had hitherto never been opened out and examined; but since September last, on a representation being made from the district of Dinagepore to the effect that a number of smaller twigs of flat hemp had been found in the bales of flat ganja, the Collector of Rajshahye has ordered a searching examination of all the bundles of the flat drug before weighment and dispatch. This order, I am glad to say, has been acted up to, and no less than 254½ maunds of smaller twigs, fit to be assessed with a duty of three rupees per seer, have been, from the 5th of September to the 20th February last, picked out and separately packed from out of 692 maunds and 24 seers of flat hemp brought to the supervisor's office. But I have reason to believe that some of the district officers, in the teeth of the supervisor's label on the bales of ganja, continue to charge only Rs. 2.8. upon the smaller twigs. I know for certain that this was done

done at Bhagulpore, and it is said that on this being brought to Mr. Money's notice, the Board's circular No. 4 of December last was issued.

Each bale of flat hemp is tied with four pieces of string in four places. It is then wrapped up in a layer of straw, pressed downwards, and again tied with four pieces of string. It is then packed in gunny-cloth, sewed up, and sealed with the Supervisor's seal.

In the case of the round hemp the ganja coolies only count the bundles inside the bale, and after weighment encase it in a layer of thatching grass, tie it with three pieces of string, press it down, and pack it up in gunny-cloth. The package is then sealed.

Each bale of either kind of ganja is weighed in the Supervisor's presence twice, once before it is packed and again after it is encased in straw or grass and packed in gunny.

A maund of ganja, after being packed and sealed, weighs about  $2\frac{1}{2}$  or  $2\frac{3}{4}$  seers more.

All the above processes are gone through by the men, the sealing only being performed by an abkaree peon.

The cost of weighing and packing a maund of round ganja is detailed below:—

	<i>a.</i>	<i>p.</i>
Coolies - - - - -	2	9
Sealing-wax - - - - -	-	9
Two pieces of gunny - - - - -	4	6
Thread - - - - -	-	3
Oil - - - - -	-	1
Men's food - - - - -	-	6
Total - - - - -	8	10

In packing a maund of flat hemp in addition to the above, the cost of a second piece of gunny-cloth is incurred, as also an expenditure of  $1\frac{1}{2}$  annas in the maund for the picking out of the smaller twigs and tying them in separate bundles.

The size of a bale of round ganja is 6 feet 6 inches in circumference, being 2 feet in length and 1 foot 11 inches in height; and that of a package of flat drug is 5 feet 7 inches in circumference, 3 feet 7 inches in length, and 1 foot 10 inches in height.

After the last weighment labels are posted on the bales indicating the sort of ganja packed and the rate of duty leviable thereon.

The Supervisor then records on the back of the import pass the particulars of the purchase, and after causing the dealer's boats or carts or bullocks to be searched, he permits them to leave the place with their consignments.

Should the ganja brought to the Supervisor's office be found to be more than the goládár is authorised to buy by his import pass, the quantity found in excess is returned to the seller, if he be present and expresses a wish to take it, or else it is locked up in the Supervisor's godown, where I found a quantity of ganja of all kinds in a damaged state, and I was told that a portion of this had been there since 1873.

I give in the margin a short statement showing the quantity of drug found in excess and retained in the Supervisor's godown since 1869.

	Flat.	Round.	Chúr.
	<i>Mds. s. c.</i>	<i>Mds. s. c.</i>	<i>Mds. s. c.</i>
1869 -	2 29 0	—	—
1870 -	0 26 0	—	—
1871 -	15 4 0	1 28 0	—
1872 -	4 28 0	0 8 0	—
1873 -	14 32 0	—	—
1874 -	18 15 0	2 0 0	—
1875 -	3 27 0	1 27 0	—
1876 -	16 30 0	0 27 2	—

The Supervisor, on being questioned, explained that these had been preserved in the expectation that the wholesale dealers who had paid for them might some day claim them. But the drug, in the condition I saw it, seemed to me to be altogether unmarketable, and after due notice to the owners, should have been long ere this burnt to ashes.

118. The number of wholesale dealers who obtained their supplies of ganja from the ganja tract last year was 254; but I have been able to ascertain for a fact that there are some goládárs who do not go Nowgong, but purchase their ganja from some of those who import the drug from the producing districts. The warehouses of Monghyr, Bhagulpore, Patna, and Arrah supply the narcotic to the North-Western Provinces; the Nepalese draw their supply, at least they annually take a quantity of hemp, from the Bhagulpore district, and Calcutta occasionally exports it to Akyab, Trinidad, and, though very rarely, to London.

119. The prices at which the ganja is bought from the producers, brokers, or fariáhs vary according to the quality of the drug. I have in paragraph 92 estimated the sum expended in preparing a maund of round ganja at Rs. 27-2, and when to this sum is added the expenses of transporting the drug from Nowgong to Calcutta and its neighbouring districts at the rate of Rs. 2-5-6 per maund, the cost of each maund comes to Rs. 29-7-3. I have known of instances in which round ganja has been sold from Rs. 25 to Rs. 45 per maund. Flat hemp is bought and sold by a kind of maund peculiar to itself (*see* paragraph 105), and even that maund is mere guesswork. Its price varies from Rs. 2 to Rs. 6 per each ganja maund, four or five of which make one ordinary maund. But a *pacca* maund of flat hemp sold from Rs. 8 to Rs. 32 in the years 1874-75 and 1875-76.

The price at which the goládárs have been selling the round ganja to the retail vendors in Calcutta during the past four years ranged from Rs. 40 to Rs. 80 per maund, and the selling prices to the consumers ranged from Rs. 249 to Rs. 360 a maund, almost the same prices prevailing in the other zillahs where the round ganja is consumed.

Flat hemp is sold to the retail dealers at a profit of Rs. 10 to Rs. 23 or even Rs. 25 per maund, but to the consumers it is sold at Rs. 180 to Rs. 190 for the same weight.

I may here mention that a wholesale goládár selling the ganja to the retail vendors by driblets loses at least a seer in each maund of flat ganja, inasmuch as a portion of the drug gets pulverised in the process of packing, unpacking, and weighing. In the same way about four to five chhatáks of wood is always unsaleable in a seer of hemp when it is sold by the retail vendors in small quantities to the consumers. In case of the round hemp, the loss in the woody matter in a seer of the narcotic disposed of to the consumers was about three or four chhatáks in former days, when the bundles were larger than they are now; at present it is from one to two chhatáks only. There is scarcely any loss in the sale of the round sort to the retail vendors.

120. With regard to the quantity actually consumed by the smokers, the Collector of Calcutta states that, besides the seeds and woody matter rejected, one-eighth is generally wasted and seven-eighths actually consumed. My own conclusions, based on actual experiments, showed that on five tolás or one chhaták of fresh flat ganja being separated from the superfluous leaves, seeds, and all woody matter, the pure drug as smoked by the consumers weighed two tolás and ten annas, wood one tolá and ten annas, and seeds and leaves ten annas; two annas lost in leaves pulverised and stuck to the cloth upon which the experiment was made.

In the same way, in five tolás of round ganja I found the pure drug as smoked by the ganja smokers, on separation from the seeds, woody matter, and extra leaves, to weigh 2½ tolás, the wood one tolá and six annas, the leaves and seeds 11½ annas, and leaves reduced to powder and not accounted for 2½ annas.

In a similar way I found in a chhaták of the *chúr* ganja 3½ tolás of pure drug as smoked by the consumers, and 1½ tolás of woody matter, leaves, and seed, which are thrown away.

Judging by the above results, I find that out of 5,941 maunds 12 seers and seven chhatáks of flat hemp, upon which a duty of Rs. 2-8 was actually levied in the year 1875-76, only 3,119 maunds 32 seers 2 chhatáks and 2½ tolás were consumed



consumed by the smokers. Of round hemp 746 maunds 20 seers 2 chhatáks and 2½ tolás were actually consumed out of a total of 1,359 maunds 11 seers and 3 chhatáks, which paid duty at the rate of Rs. 3 per seer. Of chúrs 9 maunds 7 seers and 2 chhatáks were actually used out of 13 maunds 6 seers and 6 chhatáks, upon which the Government due was realised at the rate of Rs. 4 to the seer.

121. As in the case of other intoxicating substances, so in that of ganja, the quantity consumed by different persons varies very greatly, some smoking as much as four ounces, others only forty grains per day. Ordinarily, a smoker takes three chilams (bowls) of twenty grains each or a drachm per diem; a good many poor people can afford or bear only two chilams, and the average may be safely taken at a drachm a day or two chhatáks per month. This gives an average annual consumption of a seer and a half. The total of last year's exports was 8,821-7-5, but taking the average at 9,000 maunds a year, the total of persons who can smoke ganja annually would be 240,000. Practically, however, this is not the case. Out of the total export of 1875-76 only 7,389-12-7 were actually given out to vendors who paid Government duty, the rest remaining unsold. Nor does the quantity sold represent the quantity actually consumed; a portion of it has to be accounted for as wastage, some lost by fire and other accidents, another portion—about one-fourth of the total—rejected as wood, leaf, and seeds by the consumers when preparing the drug for smoking; so the total of consumers cannot be reckoned at more than one hundred and twelve thousand persons in all parts of the world to which Rajshahye ganja is taken. In the Lower Provinces and the North-West the number is probably not more than 80,000.

Unlike Siddhi, charas, and wine, which are taken by many only on particular occasions, ganja is taken every day or not at all; it is nowhere and never looked upon as a holiday stimulant. On the other hand, it should be remembered that the practice is for each smoker to have three whiffs, after which he hands the hookah to his companion, and one bowl in this way suffices for the intoxication of three persons. When no companion is at hand, the bowl is allowed to burn to waste, or, in the case of very poor people, the fire is blown out, and the half-burnt drug reserved for a second use at a subsequent time. Taking these facts into consideration, the actual total of smokers in the Lower Provinces and the North-West should be reckoned at about two lakhs of persons.

As a rule, the hemp is not smoked by the agricultural classes; the artizan class and the syces, sweepers, páiki-bearers (not the Uriya bearers), and a few persons of the middle class, as well as mendicants, make use of the drug. The Bhooteas and the Assamese do not smoke it. The people of the Behar districts use more bháng than ganja. In the Assam districts the consumption of hemp among the coolies imported from Bengal and Behar is very limited.

122. It is not practicable to give for certain the percentage of loss sustained by the wholesale goládárs on account of dryage and wastage in their warehouses. Ganja is a substance which is peculiarly amenable to atmospheric influences, and its narcotic power loses more or less according to the quality of the drug, the state of the weather, and the length of time it has been kept in the godown. If it has not been properly prepared and well denuded of the larger leaves, or if it has been packed or brought down in a damp state, as is not unoften the case with the drug that comes early to the market, the dryage is greater than when it has been well dried and cured. The hemp dries up in a westerly breeze, but it gets moist when the breeze blows from the east; and for this reason the bales of round ganja are generally made up on a damp day, when it is blowing from the east. If the hemp be kept in a golá into which the rays of the sun have easy access, the dryage is more than what it would be if stored in a damp, well-closed godown. I have taken the opinion of some of the most intelligent and experienced ganja traders on this point, and I agree with them in thinking that the loss sustained on this account does not on an average exceed one seer in the maund. With regard to the loss by wastage, it varies according to circumstances. The injury done by rats is a serious one; the rats eat the seeds, and, in search for them, cut up and destroy the twigs of ganja. In well-raised and

well-ventilated masonry golás, such as I saw at Bankipore, with passages for cats easily to go in and come out, the loss by wastage is indeed very little; but ordinarily the wastage comes up to about two or three seers in the maund.

The proper construction of ganja golás in the consuming districts should be insisted upon, and the buildings should be inspected by the Excise Deputy Collector before they are registered and allowed to be made use of; and if the hemp be carefully looked after and timely sold, the loss on account of dryage and wastage will not exceed two seers in the maund.

The loss on account of dryage in transit from Nowgong to the importing districts is not recognised by the Board's rules, and whatever is found short on weighment on arrival at the place of storage in the importing district is charged with duty, though the Supervisor's seal on the package may have remained unbroken and the package evidently not tampered with.

It was told to me that in the district of Burdwan no allowance was made on account of dryage and wastage in the godown, and in Patna the excise officer stated to me that there was very little wastage in the golás in the sudder sub-division.

The balance of a consignment which does not meet with sale in the course of 15 months to two years, and which loses all its narcotic power, and consequently becomes unsaleable, is looked upon as mere refuse, and is burnt in the presence of an excise officer; but by certain precautions the loss from this source may be considerably reduced.

In the sudder sub-division of Patna not a blade of hemp is allowed to remain unsold in the warehouses, and there is a standing order that so long as the old drug remains in store the new article is not to be sold. Of course I do not hold up this practice as quite fair and legal, but I bring it forward to show that except when, from some cause or other, the drug is not sold within a certain time, and except when it suffers from the attacks of mice or rats, or white-ants, or from being wet through mismanagement and carelessness, the quantity fit for being burnt need not exceed three to four per cent. of the gross weight. I know it matters very little to the State how much is annually consigned to the fire, so long as it does not pass on to the consumers without paying the excise duty; but still it is a source of serious loss to the wholesale purchasers, and may with ordinary precautions be avoided.

In many districts, on the arrival of the new hemp, the old and new articles are mixed up together and sold. This is specially done by those who have their own retail shops.

Ganja retains its narcotic qualities for about a year, after which it begins to deteriorate, and becomes absolutely unsaleable after two years.

123. From the details above given it will be evident that it is almost impossible to adulterate the round hemp. Defective manipulation undoubtedly <sup>Adulteration.</sup> leads to some specimens containing more leaves and seeds than others; but no nefarious attempt is made, nor can be made, to mix with it foreign substances. A little more moisture than necessary is all that can be attempted to add to its weight, and this accounts for the difference noticeable in dryage. Flat ganja admits of a larger quantity of leaves being allowed to remain in the substance of the drug, and this, among other causes, leads to the production of the four different qualities of the drug noticed above (paragraph 113); but this, too, cannot strictly be called adulteration. It is said that in Furreedpore, Chumparun, and in some parts of Assam it is adulterated with wild bhang, but knowing how scrupulously careful ganja smokers are about picking out the leaves before smoking, I am doubtful of the accuracy of this statement. *Chur* ganja admits of greater latitude in adulteration, and it might be that it receives a quantity of powdered leaves; but this is not done to any large extent. None will adulterate a high-priced drug with worthless materials and thereby raise the amount of duty on it, and then sell it at a low price, for *chur* is less valuable in the market than the round drug. Few will buy at a higher price *chur* who can get the pure round hemp at a less cost.

124. Having thus far described in full detail the different stages in the <sup>Smuggling.</sup> cultivation and manufacture of ganja, I now come to the subject of smuggling of the drug in the producing tract. *A priori* it may be accepted as an axiom in political economy that the higher the duty the greater

greater the temptation and tendency to smuggling, and no religion, no amount of education, no moral laws have as yet sufficed to overcome them. The strictest enforcement of penal laws may check malpractices, but it cannot put an end to them. That in the case of ganja, in which an article worth 10 to 12 annas per seer is rendered liable to a duty of Rs. 2-8 to 4, there should be a strong temptation and frequent attempts made to defeat the object of the excise laws, is to be expected as a matter of course.

125. Nor is this *a priori* inference unsupported by the opinion of the officers of Government who have studied the subject and exercised supervision over the excise department. The Honourable Mr. Cockerell, in his memorandum of 1st April 1876, writes that the Supervisor gave him his positive assurance, when interrogated on the point, "that no unregistered ganja had been known to pass into consumption since he (the Supervisor) had been stationed at Nowgong, and a cutcherry established there:" but Mr. Cockerell took the statement to be only "condemnatory of the system." To me the Supervisor admitted that smuggling does take place, but only to a small extent; and estimated the quantity of hemp annually smuggled at about seven maunds only. The growers of the narcotic admit the existence of this malpractice; but as usual with these men, the people of one village shift the blame upon those of another, pointing out to another quarter of the tract, far away from where they themselves reside, as the place where they suspect the evil.

It was told to me that in former years, when the cultivation and sale of ganja were not so much controlled as now, vaishnabs, jogees, and fakirs used to come to Nowgong in large numbers in the ganja season, and would take away on their ponies bags full of ganja. Of course at the present time nothing even approaching the quantity formerly smuggled can be clandestinely given away or clandestinely sold; yet my inquiry leads me to believe that mendicants still continue to visit the ganja mahal, and either induce the females, in the absence of the men of the house, to give them a quantity of the narcotic as an act of charity, or they buy it cheap from the servants, spoilt children of the family who need money, but do not get it from their parents, or from the cultivators themselves. These mendicants not only smoke the drug they supply themselves with in this way, but they sell it to retail vendors in out-of-the-way places.

Some of the zemindars in the part of the country where ganja is grown—notably one of them—are in the habit of giving alms to and feeding mendicants; and I heard when at Nowgong from the Supervisor, from the Sub-Inspector of Police, and from the officiating Assistant Supervisor, as well as from some *vairágis*, that these zemindars have all along been in the habit of making presents of small quantities of ganja to these mendicants. It is strongly suspected that this ganja is procured by making each ryot who grows it give a small portion of the produce of his crop to the zemindars free of charge.

I was also told that cultivators sell the drug by stealth to some of the goládárs people. The Jessore labourers who come to Nowgong in the manufacturing season take away a quantity, and the crew of the boats in which the hemp is removed seize every opportunity of smuggling a few bundles of the narcotic.

The Collector of Bogra has been good enough to furnish me with a statement containing a brief history of 32 cases of the smuggling of ganja adjudicated in his district during the official year 1876-77; but, as stated in paragraph 103, some of these were not in reality cases of smuggling.

In the court of the Magistrate of Howrah several cases have come up from time to time in which parties were implicated in the smuggling of ganja and duly punished. There was a case of smuggling in the month of January last at Dinagepore, and the following cases occurred, to my knowledge, within a short period. In July last, in consequence of a considerable falling off in the excise revenue in Sylhet, the excise officers were endeavouring to find out the cause of the sudden decrease, when, in course of their inquiries, they learnt that two *mánjis* named Náser and Bain, who had been frequently bringing ganja from Rajshahye in their boats, had smuggled a quantity of the drug and kept it in their houses, which were accordingly searched, and one seer and 14 *chhatáks* of flat hemp were found there.

In December following, a couple of police constables and a village watchman belonging to thana Manda, in Rajshahye, were, about 9 p.m., on their way to Bálihar, when they saw two persons crossing the field with something on their heads. On their shouting out, the men dropped their loads and ran off. It was then found that they had dropped 36½ *kutcha* seers of flat hemp. The drug was taken possession of by the constables, but the culprits were never traced.

A few days after the above occurrence three men were seized by the police with one seer and a-half of round hemp and sent in for trial. They were subsequently convicted at Beaulah.

In the first week of January last two men were seized with seven tolas of round ganja at the Táherpore Haut. Their defence was that they had received them from a ganja grower, who, however, denied having ever given it to the men, who were found guilty of the offence and punished.

Mr. D'Oyly, in his able and exhaustive report on the smuggling of ganja, says (paragraph 5) "that flat ganja is packed in comparatively large bundles, and is therefore more difficult to smuggle than the round ganja, which is packed in smaller bundles. *Chúr* ganja is more easily smuggled than either of the two other kinds."

He adds (paragraph 7):—"The ganja Supervisor is of opinion that there is no smuggling at all; he says the cultivators can sell all their stock to licensed traders. Why, he asks, should they sell to smugglers? But of course the answer is that they can get a higher price from a smuggler than they can from a licensed trader: what the latter takes will eventually have to pay duty, while what the former takes will not be burdened with duty. The Excise Deputy Collector, Baboo Mohendranath Bose, an old and experienced officer, says that he thinks there is no smuggling, but he gives no good reason beyond this, that so few persons are detected. But the fact that some cases *have been detected* shows that smuggling *does go on*." Baboo Mohendranath Bose's words, as given in his report No. 154, dated 13th June 1876, run thus:—"The existence of smuggling on an organised and extensive scale must not be assumed before facts can be adduced in support. I must observe that, looking to the excise returns of cases for the last three or four years, I find that while heavy seizures of opium were made at the railway terminus at Howrah, at the toll office at Samookpotta, in the Soonderbuns, and the trade registration office at Sahebgunge on the Ganges, and special rewards given to captors, there is not a single seizure of illicit ganja to the extent of a maund at one time, and though I admit that non-seizure of ganja is no indication of the non-existence of smuggling, still it is clear that smuggling is not rampant, and the decrease of exports sufficiently represents a decrease in the consumption."

Mr. D'Oyly supports his opinion regarding the illicit trade in *chúr* ganja with the following remarks:—

"From the annexed Statement A. it will be seen that the annual report of flat ganja of Nowgong has remained tolerably steady for the last 11 years; the export of round ganja has also been tolerably steady, but has been subject to more variation. The export of *chúr* ganja has not only steadily decreased, but has so much decreased that the amount now exported is almost nominal. Is it possible that the consumption of *chúr* ganja can have fallen off to such an extent, from 85 maunds in 1864-65 to about 7 maunds in 1874-75? Is it credible that 7 maunds is sufficient for the whole of Bengal? If the consumption has not fallen off, the loss of revenue in what is smuggled is very great. The revenue on 85 maunds of *chúr* ganja at present rates would be Rs. 13,600, while the revenue on 7 maunds would be Rs. 1,120. If the actual consumption has not fallen off, Government has lost Rs. 12,480 on *chúr* ganja alone, and this is on the supposition that none was smuggled in 1864-65."

This argument is closely to the point; it should be remarked, however, that *chúr* ganja is not separately manufactured for the use of any particular class of consumers, but it is produced in course of manufacturing the flat and the round kinds, and was for a time held to be mere refuse, worth only being burnt or given away as a bonus to the purchaser, as the extra one in the baker's dozen or thirteen to the dozen. When a heavy duty was laid upon it, it was found expedient to avoid as much as possible the production of an article which

was more liable to deterioration than the other kinds, subject to heavier duty and disliked by the consumers. But the question arises, can the manipulation of the round and the flat drugs be so carried on as to reduce the quantity of refuse from 85 maunds in 1864-65 to 3 maunds in 1875-76? Surely in treating a valuable article the men were not so careless as to produce so much refuse where a little attention could so reduce it. The coincidence of the sudden fall in the production of the *chúr* with the date of raising the duty is also very suspicious. Another question also suggests itself: if the small bulk of the *chúr* favours smuggling, cannot the round and the flat drugs be broken, the woody stalks thrown away, and the narcotic flowers, tied up in small bundles, be carried away as easily? The purchasers want the flowers only, and not the stalks, and the saving in every maund so treated would amount to Rs. 100 to Rs. 120. The temptation is certainly very great, and the risk of detection very small; at any rate, not more so than in the case of the *chúr*.

126. On the whole it must be admitted, as stated by the Excise Deputy Collector of Rajshahye, that the facts available from the records of the criminal courts to show the extent of smuggling are insufficient, and they cannot support the idea of any extensive fraud. But, on the other hand, the probabilities are all against the theory of limited and trifling fraud. Until very recently there was no check whatever on the cultivation of the drug; any person could take up the cultivation at his own pleasure, and sow and plant to any extent he liked. The license system commenced only last year, and then there was no check as to the extent of land any one undertook to cultivate. No one on behalf of Government surveyed the fields, and there was nothing to prove that the area alleged was really what was under cultivation. The difference between the reported area (2,113 bigás and 2 cottás) last year, and the actual (3,111 bigás 9 cottás) found by measurement (paragraph 36) showed a difference of 998 bigás and 7 cottás, which at average of  $4\frac{1}{2}$  maunds of the prepared narcotic to the bigá would amount to a total of 4,491 maunds for the year. Taking the relative proportion of the round to the flat at  $\frac{2}{7}$  to  $\frac{5}{7}$ , the average duty would be Rs. 106-10, and this would amount to an annual loss of revenue to the extent of Rs. 4,78,852-14. There is nothing to show that there has not been a similar disparity between the total of the reported area and the actual under cultivation in former years; on the contrary, the presumption is strong that there was marked disparity. In dealing with an article so highly taxed as ganja, it would be an unwarrantable demand on human credulity to expect that the mere fact of a paucity of detection and conviction would justify the belief that illicit trade in the article was limited; it is not so in the case of many articles much less heavily taxed.

127. The only safeguard against illicit trade in excisable articles is constant and unwearied vigilance, and that has been wanting in the case of the drug under notice. The Collector of Bogra, in his No. 29 of 14th June 1876 (paragraph 3), says:—"Most of the ganja smuggling is due to the extreme laxity of the supervisor, who never examines the stocks of the cultivators, or endeavours to discover how they account for the deficiencies of weight in their stocks, sometimes amounting to as much as 50 or 60 seers."

Mr. D'Oyly, the collector of Rajshahye, in his No. 384 of 24th March 1876, says:—

"2. When I was at Nowgong last month I noticed among other things that the supervision of ganja cultivation was, as a check against smuggling, of little use. This is owing partly to the neglect of the supervisor and his establishment, but in a great measure to the faulty system.

"3. The supervisor is an old man, and though I believe from all I hear that he is an honest man, he is not by any means active. He has generally done the work connected with the weighing and sealing of packages of ganja at his catcherry well, but the out-of-door work, the examination of stock in the hands of cultivators, and the ascertaining how much ganja has been prepared each year, has not been so satisfactory. The supervisor has 12 chuprasees, whose duty it is to help the supervisor in these out-door inquiries. In fact, only 10 are so employed, the other two being employed in the office. The late Com-

missioner, Mr. Cockerell, went with me to some of the villages where ganja is grown, and we were shown the way by one of the chuprasees, who, of all the others, was supposed to know the country best. He was frequently at fault, and evidently had not been to these villages very lately. The supervisor himself was ignorant of the fact that round ganja was then being prepared in these villages. When I first arrived, he told me, in answer to my inquiries, that this year about 1,200 bigas only were under cultivation; but two days later he said the cultivation this year was quite up to the mark, and that 2,000 bigas were under cultivation. It was thus clear that the out-door work was not performed well.

"4. As regards the faulty system, I would point out that hitherto there has been no check on cultivation. Under the Board's rules prescribed under Section 33, Act XXI. of 1856, no restriction was imposed on the cultivation of the ganja or hemp plant (see Rule 2, Section XVII., page 75). The fault has been remedied by the new law (Act II. of 1876). Then, again, the cultivators, when they have cut their plants, and prepared ganja from it, are obliged by Rule 3 to apply to the supervisor for a license to store or retain possession of it before they sell any of it. It is a remarkable fact that though the Board's rules lay down that a cultivator must apply for a license when the produce has been gathered, and before effecting any sales, still there is no punishment for storing without a license; provided he did not sell, he might store and retain without a license for months, and this, of course, leaves the door open for smuggling. The licenses granted are in Form 29, Appendix A., page 100, Board's rules. A glance at this will show that the quantity to be retained is estimated. It is estimated chiefly from the number of bundles made, and from this information the supervisor relies almost entirely on what the ryots say. It is clear that he cannot test all their statements at once. There are generally 2,000 bigas under cultivation in different villages. All the ganja is manufactured about the same time, and so a large number of ryots come in about the same time for their licenses to retain what has been prepared. Now, even if the supervisor was to visit each khullian, to test the statement of the ryots before granting their licenses, there is nothing to prevent the concealment of a portion of what has been prepared, or to prevent some of it being taken away secretly at night, before the supervisor or his chuprasees visit the khullian. If the ryot has stored the prepared produce, the supervisor can examine 'the store,' he cannot search the several houses of the cultivator; and if he examine the store, he can only make an estimate of the weight, and count the bundles. But even supposing that he weighed the stock and found that a cultivator who had a license to store 400 bundles of an estimated weight of 10 maunds actually had in store 400 bundles weighing 15 maunds, the cultivator could not be punished. The law exempts him from punishment for retaining possession of ganja, and the weight entered in the license is only an estimate.

"As a fact, however, the supervisor does not weigh the bundles, so that a cultivator who has a license for 10 maunds, but who has in reality 15 maunds in store, can dispose of his stock, accounting only for 10 maunds. The river Jabuna runs through the ganja tracts; it is navigable all the year, and smugglers have every opportunity for taking away ganja of any description with very little risk of detection."

Baboo Mahendranath Bose, Deputy Collector in charge, Excise, Rajshahye, in his No. 75 of 9th May 1876, observes:—

"6. The rules for the cultivation of ganja, which contemplated that goládárs would take off the the stock from the hands of the cultivators after the harvest is gathered, have not been carried out, and the storing of ganja in small huts without doors is not safe, nor affords the security of Government revenue which I could wish. It has been frequently noticed and commented upon, and it is not therefore surprising that small quantities of the drug are now and then seized in possession of mendicants or *bairágis*. The cultivation of ganja under a license would not improve matters unless the conditions under which the drug is stored are considerably modified."

From my own experience of the working of the supervisor's department, and of the system under which ganja is cultivated and manufactured, I can bear testimony to the accuracy of every remark quoted above. The supervision is extremely lax, and not at all of a character calculated to prevent smuggling  
to



to any extent the cultivators may choose to indulge in. I have to add that the opportunities for smuggling are offered more frequently by the present system of storage after manufacture and before sale, than by any want of vigilance before and during manufacture. The supervisor has knowledge only of the quantity of the drug that is brought to him for weighing, and for which he issues a pass, but no opportunity of knowing anything of the actual quantity stored in the huts of the cultivators. The licenses, too, are issued on estimates, and not after actual weighing of every bale; and there is very little to show what goes out of the cultivators' huts without his knowledge. There is no patrol to visit the huts or watch the incomings and outgoings of boats by the Jabuna. Even of the quantity reported a good portion might disappear without any let or hindrance. Fires are frequent, and reports frequently sent in of quantities of the drug having been destroyed thereby. An open shed or a cowhouse where ganja is stored (*vide* paragraph 81) is of little value. Ten rupees suffice to replace one, and yet a couple of bales burnt in it is equal to a duty of over Rs. 212. There is nothing to prevent the removal and sale of the drug and the subsequent firing of the hut to cover the nefarious transaction. Every such transaction would amount to a clear gain of nearly Rs. 200. The temptation at any rate for such wicked transactions is too strong, and it would amount to stupid credulity to suppose that they are not indulged in. Then there is always lying in the cultivators' huts a large quantity of unsold deteriorated drug of former years, which should have been long since destroyed, but which stand as covers for fresh drugs illicitly sold. The total quantity of this old refuse amounts to no less than 8,264 maunds. Without offence to human morality, it would not be too much to say that they must have done duty of covers hundreds of times to protect the cultivators from the clutches of the excise law, and from deserved punishment for illicit trade.

128. The defects above set forth show that to prevent smuggling there should, in the first place, be a reliable record of the area annually cultivated; in the second place, there should be such supervision during the time of manufacture as to prevent the possibility of the removal of the manufactured drug from the field without the knowledge of the supervisor; and in the third place, such a system of storage as should afford no opportunity to illicit sale.

129. To meet the first two objects I would strongly support the recommendation of Mr. D'Oyly to bring the whole ganja tract within the jurisdiction of a single magistracy, so that there may not be any divided responsibility. The small tracts in Bogra and Dinagepore, where ganja is now manufactured in those districts, added to Rajshahye, would not swell the size of the latter to any great extent, and Mr. D'Oyly thinks he could easily manage the business of the entire tract. I would also support the recommendation of the Honourable Mr. Cockerell, that Nowgong should be made the head-quarters of a sub-division and placed in charge of an experienced deputy collector familiar with the wants and wishes of the cultivators, and having such sympathy for them as to bring him into their confidence. The supervisor should be placed immediately under him, and his pay increased to Rs. 200. Under the supervisor there should be three assistants, each on a salary of Rs. 80, with a horse allowance of Rs. 20. The supervisor should have an establishment of two mohurrirs and six chuprasees. The assistants should have each a mohurrir on Rs. 20, and two peons on Rs. 6 each. The total cost of this establishment will amount to Rs. 8,232, as follows:—

	Rs.
1 Supervisor - - - - -	200
3 Assistants at Rs. 80, plus Rs. 20 horse allowance - - -	300
Head Mohurrir of Supervisor - - - - -	30
1 Assistant Mohurrir for Supervisor - - - - -	20
3 Mohurrirs of Assistant Supervisors at Rs. 20 each - - -	60
1 Supervisor's head peon - - - - -	10
5 other peons at Rs. 6 each - - - - -	30
6 Peons for Assistant Supervisors at Rs. 6 each - - -	36
	-----
Per mensem - - - - -	686
Or per annum - - - - -	8,232



		The present establishment costs 2,280 rupees per year, as shown in the memorandum on the margin, and the increase therefore will be 5,952 rupees. The means for providing this increased expenditure I shall point out below.
	Rs.	
1 Supervisor - - -	100	
Head Mohurrir - - -	20	
1 Assistant Mohurrir - - -	10	
12 Peons - - - - -	60	
	190	

130. The duties of the supervisor will remain very much the same as heretofore, but he will be required to inspect the fields much more frequently. The three assistants should be located at three different outposts, each centrally situated for the area for which it is designed. The places most suited for the purpose are Itághatá, Murádpur Bálubhora, and Hápuníá. The supervisor and his assistants will have at an average about 800 bigas, spread over an area of about 16 miles, to supervise, and as the lands for cultivation of hemp are selected months before the date of transplantation, they will find no difficulty from June to September to measure every inch of the fields proposed to be devoted to hemp, and submit a report to the collectorate. After transplantation it will be their duty to visit the fields from time to time to see how the cultivation is progressing, and submit progress reports. In December and January they should prepare an estimate of the probable yield of each field. The work during the manufacturing season will be heavy; it will then be their duty to visit the *chátors* frequently, to take note of the quantity daily manufactured, and to see that the produce is regularly and promptly forwarded to the store-houses. If the work here sketched out be intelligently and diligently performed, there will be no opportunity given for the surreptitious removal of any material portion of the drug from the place of manufacture, and the higher authorities will always have before them full information to enable them to check malpractices of every kind.

The work should in every case be done by the assistant supervisors themselves, and no opportunity should be given to peons and underlings to harass and annoy the cultivators. Mr. D'Oyly suggests the propriety of quartering police peons on every *chátor* during the manufacturing season, and if we could rely on the honesty and fidelity of the peons so quartered, it would doubtlessly be the best and most complete check possible to the surreptitious removal of ganja from the manufacturing grounds; but I am afraid that in ninety-eight cases out of every hundred the result will be utterly useless. Every maund of ganja privately removed would be equal to a gain of a hundred rupees, and there are few police peons who would not, when there is no risk of detection, yield to a gratuity of two to five rupees. The total number of *chátors* or manufacturing yards last year was 1,585; divided between four officers these would give 396 to each, and as these latter will all be found within an area of 16 miles, it will be easy for a mounted officer to visit them once every fifth day; and I think these visits will prove much more effectual in checking smuggling than the constant presence of a peon.

131. To prevent smuggling from the houses of the cultivators, Mr. D'Oyly recommends a guard boat in the Jabuna, constant inspection of the houses of the cultivators by excise officers, and a preventive station at Sahebgunge on the Atráie river. I do not, however, think that they will prove of much use in preventing smuggling, unless supplemented by a cordon of patrols all round the Ganja Mahal; and even then they will not suffice to put down the evil effectually. The cost will be immense, and the good problematical. To depend upon a cordon of peons when there is no means of detecting neglect on the part of those peons, and where the means and opportunities of speculation on the part of the cultivators, dealers, and peons are so numerous, would be to depend on a broken reed. The best, the most convenient, and the most advantageous plan appears to me to be the absolute prohibition of private storage and the establishment of public godowns where the drug may be warehoused in bond. The highest number of one-maund bales for which provision has to be made in any one year is 9,000; each of these at an average covers a space of about 2 feet 6 inches; but to provide space for passage, ventilation, and partitions for separate stores, I reckon the area at 5 feet per bale, or a total of 45,000 square feet. Bales, however, can be ranged one over another, and accepting three layers as the ordinary mode of ranging bales,

an area of 15,000 square feet would fully suffice. In the ordinary course of business all the bales do not come in at the same time; some go out while others are dropping in; but as the manufacture is completed all at about the same time, and my scheme contemplates that every bale completed should be brought in at once, I do not make any allowance for outgoings. A godown 125 feet by 20 feet would cover 2,500 feet, and six such would provide the required extent of space. Built of corrugated-iron walls and roofs, or kutchapucka walls and pantile roofs, with a good pucka floor, each of these godowns would not cost more than 5,000 rupees, and the six a total of 30,000 rupees. If built of corrugated iron, the walls and the roofs will have to be lined with *darmá* mats, to prevent the heated metal drying up and injuring the drug during the hot weather. Three of these should be at the sudder station of Nowgong and the other three at the three outposts, and to these the cultivators or license-holders should be required to bring in the manufactured drug in dribblets as soon as every bale is ready for removal, and there kept in bond until sold. Once under the lock and key of the supervisor, the drug cannot be removed without his sanction, and no inquisitorial visits, guards, patrols or watch of any kind will be required, and the possibility of smuggling will be reduced to a minimum. Loss by fire and theft would be simply impossible. The first outlay will be large, but by no means such as to be too much for so important an object as the prevention of an evil which at present entails a loss of excise revenue to the extent of from one to two lakhs of rupees every year.

Besides, the bonding need not be gratuitous. I think a charge by way of rent of a rupee per bale for any period under one month, and four annas additional per bale for every subsequent month or part of a month, would be light, and readily paid for the security and safety of the goods; under no circumstances can it be felt as a hardship. As the sales are spread over the whole year, this rent would produce at an average of 1 rupee and 12 annas per bale a revenue of 15,750 rupees, or over one-half of the total outlay. The interest on 30,000 rupees at 4 per cent. is 1,200 rupees, and the increased expenditure suggested under the head of establishment (paragraph 129) is 5,952 rupees; adding thereto a sum of 1,000 rupees for repairs and sinking fund, to provide against the deterioration of the six godowns in course of time, the total expenditure will amount to 8,152 rupees, leaving a balance of 7,598 rupees per annum as clear gain. I venture to hope therefore that the scheme will meet with the approbation of the Member-in-charge. If this be adopted, most of the precautions suggested by Mr. D'Oyly will be redundant; I need not therefore discuss their advantages and disadvantages at length.

132. The supervisor, though elderly, is not an old man, but he is known to be honest; and having been for nearly 18 years at Nowgong, is well acquainted with every nook and corner of the Ganja Mahal, and the ryots look up to him, and he exercises great influence over them. If, as it is proposed, the hemp cultivation should henceforward be more effectually controlled, and a new scheme introduced without causing any irritation amongst the ganja tenantry, I would recommend the retention of the present supervisor's services for at least two years. The cultivators in a body seek his advice, and without him, and with greater interference with them than was ever before attempted, there is every fear of the work being seriously disturbed. With three outposts in charge of competent officers the supervisor's work will be greatly reduced, and there need therefore be no apprehension of failure on his part. At present the means he has to work with is totally inadequate for the end in view, and he should not be visited with punishment for the shortcomings of his department.

The head mohurrir, who does all the supervisor's work in his absence, at present draws a salary of 20 rupees per mensem, and the second clerk only 10 rupees. These men, it is superfluous for me to say, are placed in the midst of great temptations, and the cultivators of the ganja and the brokers, as well as the goládárs, are all at their mercy. They work hard, and I would respectfully suggest that the pay of the head mohurrir be raised from 20 rupees to 30 rupees, and that of the second mohurrir from 10 rupees to 20 rupees.

133. The question of duty on a narcotic substance has to be viewed from two different standpoints: first, with reference to its effects on society; and second, with reference to revenue. There

Duty: its effect on morality.

can be no question that the use of narcotics for the purpose of intoxication is, and must always be, hurtful to society; and the idea is that the more it is restricted by heavy duty, the better for the well-being of the community. I do not share the idea; I think the repressive power wanted is a moral and not a financial or a penal one. Admitting, however, the correctness of the theory for the sake of argument, it has to be borne in mind that there is a limit beyond which restrictive duty fails to be effectual, and the object of repression is defeated. Duty and smuggling move hand in hand; with increase of duty smuggling becomes more rife, and it cannot be put down. A remarkable instance of this is afforded by the Maine law for the suppression of the vice of drunkenness. Notwithstanding its most stringent provisions, the law has proved simply abortive, and no one at a hotel in Maine is under any difficulty in getting as much spirituous drink as he chooses to call for. As regards ganja, the case is, however, different. It is grown on a single small tract in the corners of three adjacent districts, and requires a course of cultivation and manipulation which cannot possibly be carried on in private; and if the use of the drug be, as no doubt it is, hurtful to man, it could easily be suppressed altogether. No ryot in Rajshahye could grow it without a license, and there is no other place in India or out of it whence it could be easily smuggled to such an extent as to supply the place of the Rajshahye drug. The quantity grown in the tributary mahals of Orissa is extremely limited; only 77 maunds were imported from it into Pooree, Cuttack, and Balasore in 1875-76, and it would take several years before the cultivation could be so pushed on there as to replace the 9,000 maunds, or any great portion of it, required in the districts of Bengal. In the meantime the two lakhs of people who smoke the drug will have given it up, and there will be no demand for it. So, for the sake of humanity, the most convenient course would be to prohibit the cultivation altogether, and not to repress it by a high rate of duty which, unless it becomes prohibitive, produces no appreciable effect. Ganja does not produce in its consumers that banking for the drug which opium does, and the amount of injury to the smokers when deprived of it cannot be great. The sanitary records of the Indian gaols do not show that convicts accustomed to the drug have suffered in any way by being deprived of it. I am of opinion, however, that no moral gain whatever will be effected by the total suppression of ganja. There is a longing for intoxicating substances in human nature which nothing can eradicate, and those who will be obliged to forego ganja on account of high duty will replace it by bhang, charas, daturá, arrack, and other stuffs infinitely more hurtful both to them and to society at large. Confirmed ganja smokers, though lost to society, are as a rule inoffensive to their neighbours, and do not form the most criminal portion of the population. An equal number of drunkards would be a positive pest to society. The idea of subserving the cause of temperance by raising the duty on ganja may therefore be dismissed as chimerical. I hold, too, that it is not just to deprive any portion of the community of any of their comforts, conveniences, or enjoyments for the sake of others, so long as the said others are not in any way injured by them. To quote the language of the Member-in-charge, used with reference to the memorials some time ago submitted by certain temperance societies of Calcutta,—"The fact that 600 men in a village prefer to drink water is no sufficient reason for debarring the remaining 200 from obtaining some other drink if they wish it. It would be questionable how far it would be right to set up such a tyranny of majorities." And what is true of spirits is equally so of ganja. If some people like spirits, it is no reason why others should not be allowed their ganja or charas. Mr. Money has already very justly said that no "further measures are now necessary to restrict or repress the consumption of the drug, as in that case smuggling would increase, and a large number of people, who are moderate consumers, would be denied the benefit they derive from the drug, and would be driven to equally deleterious preparations of bhang, which grows wild in many districts of Bengal. The public revenue would also suffer immensely, and no corresponding advantage would be gained."

134. As a question of revenue, the duty on ganja has to be regulated with  
*Duty as a source of* reference to the value of other narcotics, the resources of  
*revenue.* those who use the drug, the habits, customs, and social  
 feeling of the community among which it is used, and a variety of other  
 circumstances

circumstances which bear upon the subject. It has been already stated (paragraph 121) that the class of men who use ganja belongs to the lowest stratum of society; the men are mostly poor, and resort to the drug chiefly because they cannot afford more costly stuffs, and do not choose to betake to the use of the cheaper, but more hurtful, drugs like daturá, arrack drugged with coculus, &c. To raise the duty so as to place ganja beyond their reach would be to drive them to the cheaper and more hurtful stuffs, and thereby to reduce the income from ganja. This is a consummation which is not at all desirable; it would neither subserve the cause of morality nor of revenue.

135. Bearing this in mind, and also the fact that the raising of duty on *chúr* to four rupees per seer has reduced the consumption from 85 maunds 17 seers, valued at 13,668 rupees, in 1864-65, to 3 maunds and 25 seers, valued at 580 rupees, in 1875-76, showing a loss of revenue to the amount of 13,088 rupees per annum, I am of opinion that the present rate is as high as the drug can bear. It is true that the raising of the rate on flat ganja from two rupees to 2-8 rupees in 1872-73, and on round ganja from two rupees to three rupees in 1864-65, has effected a slight increase in revenue, while decreasing the consumption of the drugs; but the great increase in the consumption of other intoxicating stuffs of late years shows that morally there has been no gain, and that most probably those who have foregone ganja have taken to other substances. In 1875-76 the total amount of duty on ganja came up to 11,20,349 rupees; adding this to 1,93,233-15, as the cost of 7,389 maunds 8 seers and 7 chhatáks of the drug on which the duty was raised at an average selling price of 25 rupees per maund, and 48,308-8 rupees for all charges of transit, wastage, loss, interest on capital, and other outgoings, at an average of 25 per cent. on the cost of the drug, the grand total would be 13,61,891-7. This divided among the two lakhs consumers would give an average of 6-12-5 rupees per maund per annum. The income of the class of men who consume ganja cannot amount to more than six rupees per mensem, and the amount they pay for their luxury is already enormous. I apprehend, therefore, that the highest limit has been nearly reached, and any excessive addition to the rate will lead to loss, as in the case of *chúr*. Dealing, however, with a large number of persons inveterately attached to the drug, and determined to forego many of the necessaries of life for the sake of it, I think a slight increase might be attempted without any risk of loss, though it will for certain lead to further suffering among the class who indulge in the drug, for they are sure to use the drug by putting themselves and their families to privations in other respects. Four annas per seer, I think, will not be felt, but eight annas would be the highest that can be safely ventured upon; anything above that would most likely lead to loss. As regards *chúr*, I would respectfully suggest that the rate be equalized with that of the round drug. It is true that it contains less woody and more narcotic matter than the round drug, but at the same time it is not liked by smokers; it dries up and deteriorates much faster, thereby entailing heavy loss to the dealers, and its advantages therefore are fully covered by its defects. The loss by the reduction would be a mere trifle.

136. A proposition is now under consideration as to the propriety of equalizing the duty on the three sorts of ganja, with a view to prevent the insertion of small twigs, containing very little woody matter, within the bundles of flat ganja, whereby the Government is defrauded, and to simplify the keeping of accounts. These advantages are, however, on the whole not of much importance, and at the same time the plan is open to a serious objection. It would be a positive injustice to the consumers if the same rate be charged for both inferior and superior articles. It should be borne in mind that in the first place round hemp, as a rule, is made from only the best plants, and only those parts of the plants are appropriated to it which have borne the crowded flowers well—a practice which is scarcely followed in the manufacture of flat hemp. Then, with the exception of a portion of the bare stem and the branches which have not absolutely borne any cluster of flowers, no other part of the plant is rejected in making the flat drug. Such is not the case with the round ganja, which consists of only slender twigs. In short, the plants, which yield 5 maunds and 16 seers of flat ganja, produce only 3 maunds and 38 seers of the round-shaped drug. In the official

year 1864-65 the duty on the round ganja was raised from two rupees to three rupees per seer. The supervisor's books show that before that time the bundles were much larger, and consequently contained much more woody matter than now. They were then about  $1\frac{1}{2}$  to 2 feet in length, and 40 to 50 or 55 bundles made up a maund. Since then the size of the bundle has been reduced year after year and a greater proportion of the stalks rejected. The bundles are now only one foot in length, and in the majority of cases more than 100 of these make a maund; so that the gain has not been so substantial as is apt to be supposed. The relation between the two drugs is about four to five, and the consumer of the cheaper article cannot but complain if he be made to pay the same duty which the consumer of the more highly valued drug does. In the case of rum, the duty is regulated by the quantity of spirit contained in it, and the principle on which the duty is regulated there should also apply to ganja.

The collector of Rajshahye is for a uniform rate, on the ground that the narcotic power of both the sorts is one and the same. This may be, but as the Member-in-charge is well aware, the importers of flat ganja get much more wood with the drug than the wholesale purchasers of round hemp do, and a uniform rate of duty would be unfair to the former. It may be argued that the importers will be at liberty to reduce the bulk of the wood with the increase of the duty; but unless portions of the main stalk and the twigs on it are kept intact and pressed one upon the other in the bundle, the resinous matter dries up in a very short time and the narcotic loses its power; the goládárs will not therefore find it to their advantage to separate the small twigs from the main stalks in the case of good and well-grown plants.

137. The last subject I have to notice is the propriety of levying the duty on ganja at Nowgong, instead of the present practice of levying it in the consuming districts. Mr. Money recommends this method with a view to restrict the use of ganja, at the same time to save the Government "from a great deal of cheating" sheltered under the head of dryage and wastage. It appears that ere this proposal was definitely made and placed before Government the opinion of the local officers had been invited, and it appears from paragraph 14 of the Member-in-charge's minute that "there is a great diversity of opinion among local officers as to the introduction of the system proposed;" and the case of the North-Western Provinces is cited, where the dealer pays the duty when he purchases his supply either at Nowgong or in the districts of Behar.

With all deference to the opinion of the Board, I beg leave to submit that the system proposed will, all circumstances being taken into consideration, neither effectually reform the old ganja smoker, and keep him away from the use of some kind of stimulant or other, nor tend to the increase of the Government revenue. I do not think that the Government is cheated under the cloak of dryage and wastage, both of which the Member-in-charge admits "do unquestionably take place," and the non-receipt of duty on that which is wasted is no positive loss.

The system of levying the duty when the narcotic is sold to the retail dealers has been in vogue from a very long time, and up to this moment I am not aware of any fraud having been perpetrated by the wholesale warehouse keepers which can go to show that short weight, in reality caused by a quantity of the drug being surreptitiously sold, is accounted for under the head of dryage and wastage. At least no such fact has been brought forward in the lucid minute in which the proposal has been made.

Under the present system the wholesale goládár, though master of the drug, does not and cannot exercise the rights of a master over it. From the time it is brought to the Supervisor's office it is packed up and sealed in the way which seems best to that officer, and on arrival of the consignment at his godown, he is held responsible if the impression of the Supervisor's seal on the bale looks suspicious, or the bale is otherwise tampered with. Whenever there is any reduction in the weight of the bales, he is at first made to pay duty upon the dryage in transit, and then allowed to remove the drug to the bond godowns, where it is kept under double lock and key. In fact, it practically remains in the custody of the excise darogah, whose convenience the wholesale dealer has to consult when he has occasion to take out the drug. If, then, in the custody

of our own excise officer (the key of the registered warehouse is in some places kept by the Deputy Collector) the narcotic loses much by dryage and wastage, how can the wholesale dealer be accused of cheating the Government? It may be said that the abkaree darogah cannot always be depended upon. This recoils on the Government officers concerned, and does not criminate the dealer, and the remedy should be looked for in other quarters than the dealer. If there be any suspicion, let the joint custodian of the ganja be the Deputy Collector in the sudder stations and at the head-quarters of the sub-divisions, or the Sub-Deputy Collector, and let no warehouses be allowed anywhere else; let better golás be constructed, and let the joint custodians of the drug be enjoined to be a little more merciful to the wholesale dealer than the excise darogah is generally said to be; as I have come to know in the course of my inquiry that, in consequence of his unwillingness, the goládár cannot look after his ganja as often as it is necessary in order to save it from the ravages of white ants. I have already, in paragraph 122, shown that in the sudder sub-division of Patna there is scarcely any loss by wastage. What I would respectfully urge is that the trial be made at first to improve the existing system, and then, if it fail to secure the desired end, recourse may be had to some such measure as that proposed by the Board. I say this because I apprehend the change proposed will seriously interfere with the trade and lead to loss.

The ganja trade is confined to men who have inherited it from their forefathers. A good many of these work with their own capital, though they are not wealthy men, and having learnt no other trade from their infancy, they cannot venture to launch their small capital in some other enterprize.

They have not the means to lay out the whole amount of duty all at once. I have already mentioned in paragraph 102 that most of the wholesale dealers, for want of funds, buy the hemp at Nowgong on credit. Will these men be able to pay in advance the duty upon so much even as 20 maunds of drug, which, I believe, is the smallest quantity imported by goládárs living at some distance from the place of exportation? They cannot, and consequently they will be driven out of the field. The Member-in-charge is well aware of this: he observes,—“There is no doubt that the changes I propose will be attended at first with a heavy loss of revenue; a number of the present dealers, men of no capital, will be thrown out of the trade.” Again, “it will certainly take time before the revenue will be able to reach again its present figure of 10,98,093 rupees. The price to the consumer will be raised owing to the greater cost to the wholesale dealer, who, paying duty when buying, must charge the interest of that amount to the retail dealer. The usual result of enhanced price, diminished consumption, must follow.” He expects, however, that “the thing will finally adjust itself; for as long as there is a demand for an article, people will be found to supply it.” It should be borne in mind, however, that the trade is not a popular or a respectable one: native society looks upon the trade with disfavour, and the traders are looked upon as low people, and capitalists will be very shy to take up a trade which will lower them in the estimation of their countrymen. The trade, too, is surrounded by many difficulties, embarrassments, and trouble. The risk is also great.

The busiest season for the export of new ganja is from April to June and July, and a greater portion of it is removed in boats. The weather at that time is very squally, and the ganja boats are never insured. As the boats are well loaded, the sinking of a single boat leads to serious loss, and instances are not wanting to show that boats now and then do sink on their way to the importing district. Kristo Mohun Shaw, an old wholesale dealer of Beerbhoom, told me when I was there in January last that he had some time ago lost about 100 maunds of ganja by his boat sinking in the Jabuna. In the same way, some ten years ago, Samírúdin Mollah, a goládár of Monghyr, lost 25 maunds; and some eight years ago, one Khajey Mandal had to suffer a loss of about 40 maunds of hemp. I have also been informed of an instance in which a quantity of hemp was lost from the railway station of Synthia.

The auction system, under which no one can be sure of securing a shop for the retail vend of the drug, is another serious difficulty in the way of lucrative trade. The Member-in-charge, I think, is aware that unless the importer of Rajshahye ganja has a few retail shops of his own, or can secure the patronage of a number of such shops held by others, the chances are that he cannot sell much of what he has imported; and I need hardly point out the great



uncertainty and difficulty which now-a-days exist in securing a shop for the retail sale of ganja. Those wholesale dealers who have no retail shops of their own induce those who have them, but who have no registered warehouses, to patronize them by selling on credit, the importer paying the duty in advance. Some of the best goládárs have as many as 20 shops which are supplied in this way. This kind of transaction not unoften ends in loss to the former. To large capitalists and men of respectability, the task of securing the patronage of low vendors cannot but prove offensive, and the inducement offered not being such as to overcome this feeling of repugnance, there must be for a long time to come a want of capitalists and consequent dulness of trade.

It is true that in the North-Western Provinces the farmers of the drug mahal pay down the duty on removing the article from the Behar districts, from which they draw their supplies. Some of the farmers are the goládárs of Patna, Buxar, and Arrah, and a few have their own golás at Buxar, from which they take away the ganja only in small quantities; but the total quantity taken is so small that this practice cannot be appealed to in support of the proposal to subject the whole trade to that system.

It is well known to the Board that there are not many goládárs who can manage to effect a sale of their entire stock. Ganja is a perishable article, and that which cannot be sold within a reasonable time has to be reduced to ashes; and will it be fair to levy duty upon this quantity also? It is said by some that the wholesale dealers have no business to import more drug than they can sell; but they have not the means to know beforehand the exact quantity they will be able to dispose of. One has say five shops when he imports a quantity of drug, but he loses them at the next settlement, and he thereby loses the chief means of selling his ganja. The goládárs pay a good price for the ganja they buy, and incur heavy expenses in removing it from the producing district, and naturally enough they try their utmost to effect a sale of it, but are not in all cases successful.

Taking all these circumstances into consideration, and bearing in mind the loss of revenue which will be incurred for certain for some time to come, I am respectfully of opinion that it is not desirable to adopt the proposed scheme, for the present at least. The measures suggested above will naturally cause much consternation among the cultivators, and it is not at all advisable to add thereto a scheme which will so materially interfere with the ready sale of the drug. Annoyance and vexation may be borne, but positive loss will for certain be resented. Many will give up the cultivation of the drug and betake themselves to other occupations, and the trade will sustain a shock from which it will find great difficulty to recover. Vexatious meddling closed the cultivation of the drug in Jessore, and there is nothing to show that similar consequences might not follow from the same cause in Rajshahye. The measures I have suggested will produce an immediate increase of revenue to the extent of from ninety thousand to one lakh and eighty thousand rupees, according as the duty is raised by four or eight annas, and it will remove all inquisitorial domiciliary visits and vexatious interference. The trade therefore cannot but prosper, and I humbly think that reforms in the system of cultivation of, and trade in ganja should, for the present, at least, stop there. At any rate, the question lies between positive and immediate gain on the one side and positive and immediate loss, with problematical prospective gain, on the other, and it is for the Member-in-charge to decide which should be adopted.

138. While on the subject of duty on ganja, I beg to observe that a large quantity of the so-called wild bhang, which grows in almost every district of Bengal and Behar, is consumed by the people of those places; but, with the exception of Calcutta, where a fixed duty of four annas on the seer is levied, the shops elsewhere pay a very small sum by way of license fee, and under it they are at liberty to sell any quantity of the narcotic they can manage. From one district alone, 26 miles from Monghyr, no less than 1,721 maunds were exported in 1873; in 1874 the quantity rose to 2,824 maunds; in 1875 it was 2,326 maunds; and in 1876 the quantity exported weighed 2,265 maunds. Bhang is also exported from Bhagulpore, but I am not aware of the quantity annually taken away therefrom.

The wild bhang grows in the month of Kartik, and is cut in that of Chait; it is then dried, and the leaves are separated from the stalk by threshing. The shopkeepers employ labourers to cut the bhang from the cultivators' fields, and after



after it is prepared, store it in their shops. Whenever any licensed vendor arrives from another district provided with pass, he is at once supplied with the drug.

I would propose that a duty of four annas on the seer be levied in all the districts of Bengal and Behar, in addition to what is paid by way of license fee.

The information before me shows that the wild bhang and ganja of the gurjats of Orissa do not interfere with the consumption of Rajshahye ganja to any material extent.

— 139. To sum up the result of my inquiry, I found, firstly, that the area under cultivation with hemp year after year was never measured; secondly, that no measures were taken to ascertain the quantity of the annual outturn of the hemp crop; thirdly, that the places used for storage of the drug, either in the cultivators' houses or the supervisor's office, were most insecure; fourthly, that the conditions of the license to purchase ganja by wholesale were not fully acted up to, inasmuch as the holder of the license neither does nor is told to collect all ganja purchased by him in one place fixed by the local excise officer; fifthly, that the places where the drug is stored were never periodically inspected; sixthly, that useless ganja was allowed to remain in the cultivators' houses for years and years; seventhly, that cultivators were allowed to retain the drug in their possession without a license authorising them to retain it; eighthly, that going their rounds in the ganja tract was almost unknown to the supervisor and his establishment, and that consequently nothing was done to prevent smuggling of the narcotic; and, lastly, there was no check in respect to the quantity of drug actually bought by the wholesale dealers from cultivators.

For remedying these and other evils, the measures which have been suggested in the body of this report, briefly told, are as follow:—

Firstly.—That the whole of the ganja tract should be brought under the jurisdiction of the Collector of Rajshahye.

Secondly.—That a sub-division should be established at Nowgong, and placed in charge of an experienced officer.

Thirdly.—That the supervisor's establishment should be strengthened by three assistants and additional amlah.

Fourthly.—That three outposts should be established at Murádpur Bálubhorá, Itághátá, and Hápuníá.

Fifthly.—That six store godowns should be built, three at Nowgong, and one each at the three outposts.

Sixthly.—That a rent should be charged for storage in those godowns.

Seventhly.—That the supervisor and his assistants should survey and measure every field, and submit periodical reports.

Eighthly.—That no ganja should be stored in other than public godowns.

Ninthly.—That the drug left unsold after two years should be destroyed in the presence of the supervisor or one of the assistant supervisors.

Tenthly.—That the duty on the round and the flat ganja be raised by four to eight annas per seer on the existing rates, and that on chúr the duty be reduced to the amount charged on the round drug.

Lastly.—That the ganja brokers be licensed.

I have, &c.

(signed) *Hem Chunder Kerr,*

—Deputy Collector on special duty.

## APPENDIX A.

STATEMENT showing the Number of Persons engaged from Year to Year in the Cultivation of Gánjá, the Area under Cultivation, and the Quantity of Hemp produced in each Year from 1854 to 1876.

YEAR.	Number of Persons engaged in the Cultivation of Hemp.	Estimated Quantity of Land under Cultivation.		Estimated Quantity of Gánjá produced.			Remarks.
		*Beegahs	Cs. Ch.	Mds.	S.	Ch.	
1854 - - - - -	2,417	-	-	26,677	35	4	
1855 - - - - -	1,601	-	-	15,472	28	0	
1856 - - - - -	1,704	2,608	10 0	20,868	19	8	
1857 - - - - -	2,066	2,244	6 0	20,973	23	0	
1858 - - - - -	2,195	2,622	10 0	23,291	2	8	
1859 - - - - -	1,785	2,187	12 8	20,626	37	0	
1860 - - - - -	1,439	1,873	16 0	13,998	35	0	
1861 - - - - -	1,617	1,890	17 0	15,496	24	3	
1862 - - - - -	1,973	2,206	14 0	18,417	25	0	
1863 - - - - -	1,226	1,544	18 0	10,810	2	0	
1864 - - - - -	2,118	1,921	11 0	16,332	32	0	
1865 - - - - -	1,176	1,309	2 0	8,288	16	0	
1866 - - - - -	1,261	1,399	13 0	8,761	8	0	
1867 - - - - -	1,504	1,639	10 0	11,116	3	0	
1868 - - - - -	1,053	1,161	9 0	6,508	25	0	
1869 - - - - -	2,096	2,096	12 0	13,758	24	0	
1870 - - - - -	1,559	1,677	10 0	8,608	31	0	
1871 - - - - -	1,766	1,647	6 0	9,830	10	0	
1872 - - - - -	1,568	1,531	8 0	7,622	25	0	
1873 - - - - -	2,480	2,407	19 0	14,274	0	0	
1874 - - - - -	2,161	2,278	14 0	11,865	34	0	
1875 - - - - -	1,269	1,290	2 0	6,496	29	0	
1876 - - - - -	1,908	1,816	16 0	10,814	12	0	
<b>TOTAL</b> - - -	<b>39,761</b>	<b>39,856</b>	<b>12 8</b>	<b>320,932</b>	<b>2 7</b>		
<b>Average</b> - - -	<b>1,728</b>	<b>1,711</b>	<b>3 0</b>	<b>13,953</b>	<b>22 9</b>		

\* One beegah is equal to about one-third of an acre.

## ARTICLE ON CANNABIS SATIVA.

By GEORGE WATT, M.B., C.M., F.L.S., C.I.E., Reporter on Economic Products with the Government of India.

EXTRACTED from the "Dictionary of the Economic Products of India," Vol. II., pages 103-126.

CANNABIS, *Linn.*; *Gen. Pl.*, III., 357.

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CANNABIS SATIVA, *Linn.*; *DC. Prodr.*, XVI., I., 30; URTICACEÆ.

HEMP; INDIAN HEMP; CHANVRE, *Fr.*; HANF, *Germ.*; CANAPE, *It.*; KONAPLI, *Rus.*; CANAMO, *Sp.*; HAMP, *Dan.*; KANAS, *Keltic.*; CANNABIS, *Latin and Greek.*

SYN.—C. INDICA, *Lamk.*

VERN.—*Gánjé-ká-pér*, *kinnab*, *bhāng*, *ganja*, *charas*, *gúr*, *siddhi*, *sabzi*, *phúlganja*, HIND.; *Ganja*, *bhāng*, *sidhi*, BENG; *Gúr-bhānga*, female and *phúl-bhānga* male fibre plant in N-W. P.; *Sabji*, or *bhāng*, *ganja* and *charas*, N-W. P.; *Bhāngi*, *bhāng*, *bēngi*, *charas*, *kas*, *sabzi*, (*gúlú*, the seeds, and *chel*, fibre), PB.; *Bāngi*, KASHMIR; *Ganja*, C. P.; *Ganja*, GUJ.; *Ganja*, CUTCH; *Bhāngacha-jháda*, MAR.; *Sidhi*, *gánjé-ka-jhar*, *ganja*, DUK.; *Ganja-chedi*, *kórkhar-muli*, *ganja-ilai*, *bangi-ilai* (leaves), *ganja-phal* (resin), *ganja-rasham*, *ganja*, *kalpam*, TAM.; *Ganjari-chettu*, *bangi-aku*, *kalpam-chettu*, *ganja-chettu*, *ganjai*, *gangah*, TEL.; *Tsjerú cans-java*, *kancháva-chetti*, *gingi-lacki-lacki*, *ginjil-achi-lachi*, MALA.; *Bhāngi*, *bhāngi-gida*, KAN.; *Ganjika*, *vajradru-vrikshaha*, *bhānga*, *viáyá*, *ganja*, *indrásana*, *ganjika*, *hangá*, *ujáyá*, *jáyá*, *vrij-patta*, *chapola*, *ununda*, *hursini*, SANS.; *Kandir*, KASHGAR; *Kinnab*, *hináb*, *nabátul-gunnab*, *kanab*, ARAB.; *Darakhte-kinnab*, *darakhte-bang*, *bang*, *nabátul-gunnab*, PERS.; *Bhénbin*, *ben*, *bin*, *sejáv-bin*, *sechaub*, BURM.; *Matkansha*, *ganjá-gahá*, *kansá-gahá*, SINGH.

The above vernacular names are either given to the plant or to the forms of the narcotic. It has been found impossible to separate them for certain, and they have accordingly been left for the present in what must be admitted an unsatisfactory form. Much apparent confusion exists in the various provincial forms of the same word.

REFERENCES.—*DC. Prodr.*, XVI., p. I., 30, published in 1869; *Rozb.*, *Fl. Ind.*, Ed. C.B.C., 718; *Kurz*, *For. Fl.*, *Burm.*, II., 420; *Dalz. & Gibs.*, *Bomb. Fl.*, *Suppl.*, 79; *Stewart*, *Pb. Pl.*, 215; *Aitchison*, *Cat. Pb. and Sind Pl.*, 139; *DC. Origin of Cult. Pl.*, 148; *Voigt*, *Hort. Sub. Cal.*, 282; *Pharm. Ind.*, 216, 463; *Moodeen Sheriff*, *Suppl.*, *Pharm. Ind.*, 85; *Flück. & Hanb.*, *Pharmacog.*, 546; *Bentl. & Trim.*, *Med. Pl.*, 231; *Per. Mat. Med.*, by B. & R., p. 504; *Cooke*, *Seven Sisters of Sleep*, pp. 212-217; *T. & H. Smith*, in *Pharm. Journ.*, VI., *Series I.*, 171; *Amer. Journ. Pharm.*, XLIX., 371; *Lindl.*, *Fl. Medica*, 299; *Macnamara*, *Report on Gánjú*, No. 71, dated 11th June 1872; *U.S. Dispens.*, 15th Ed., 388, 977; *U. C. Dutt*, *Mat. Med. Hind.*, 235, 293; *Dymock*, *Mat. Med.*, *W. Ind.*, 603, and 2nd, p. 732; *Ainslie*, *Mat. Ind.*, II., 108; *O'Shaughnessy*, *Beng. Dispens.*, 579; *Murray*, *Pl. and Drugs*, *Sind*, 30; *Bidie*, *List of Raw Prod.*, *Paris*, *Exh.*, 43, 83, 106; *Johnson*, *Chemistry of Common Life*, Ed. by Church (1880), p. 333; *Hem. Ch. Kerr*, *Report on Bengal Ganja*; *Year-Book of Pharmacy*, 1873, p. 100; 1874, p. 72, 105; *S. Arjun*, *Bomb. Drugs*, 126; *Drury*, *U. Pl.*, 106; *Baden Powell*, *Pb. Prod.*, 292, 293, 504; *Royle*, *Fib. Pl.*, 252, 314, 316; *Jameson*, in *Journ. Agri.-Hort. Soc. of India*, VIII., 167; *Cooke*, *Oils and Oilseeds*, 33; *Liotard*, *Paper-making Mat.*, 5, 7, 10, 15, 23, 24, 28, 43; *Atkinson*, *Him. Dist.*, 760, 799; *Crooke*, *Dyeing*, 63; *F. Watson*, *Gums and Resins*, 28; *Birdwood*, *Bomb. Prod.*, 79, 212, 271, 318; *Lisboa*, *U. Pl. of Bombay*, 211, 233; *Duthie & Fuller*, *Field and Garden Crops of the N-W. P. & Oudh*, Part I., 80; *Spons' Encyclop.*, 934-8, 1305, 1391; *Balfour*, *Cyclop.*, Ed. 1885, I., p. 569; *Smith*,  
97. Dic.,  
U 2

*Dic.*, 210; *Treasury of Botany*; *Morton, Cyclop., Agri.*; *Ure, Dic. of Arts and Manufactures*; *Hanbury, Sc. Papers*, 187; *Kew, Official Guide, Mus.*, No. 1, p. 120.

**HABITAT.**—*Cannabis indica* has been reduced to *C. sativa*, the Indian plant being viewed as but an Asiatic condition of that species. This extends the region of the hemp-plant very considerably. It has been found wild to the south of the Caspian Sea, in Siberia, in the desert of Kirghiz. It is also referred to as wild in Central and Southern Russia and to the south of the Caucasus. The plant has been known since the sixth century B.C. in China, and is possibly indigenous on the lower mountain tracts. Bossier mentions it as almost wild in Persia, and it appears to be quite wild on the Western Himalaya and Kashmir, and it is acclimatised on the plains of India generally. Indeed, the intimate relation of its various Asiatic names to the Sanskrit *bhanga* would seem to fix the ancestral home of the plant somewhere in Central Asia. On the other hand the Latin and Greek *Cannabis* is apparently derived from the Arabic *Kinnab*. De Candolle says that "the species has been found wild, beyond a doubt, to the south of the Caspian Sea, in Siberia, near the 'Irtysch,' in the desert of the Kirghiz, beyond Lake Baikal, and in Dahuria." He is doubtful of its being a native of Southern and Central Russia, but suspects that its area may have extended into China, and is not sure about the plant being indigenous to Persia.

Hemp acclimatised  
and cultivated in  
India.

It has gone wild as a cold-season annual on rubbish heaps in Bengal and in many other parts of the plains of India. It is specially reported as springing up spontaneously on the churs of the Suburnrekha and to be wild in the territory of the Mohurbhunge State on the frontier of Midnapur and also in Singbhum. It is cultivated more or less throughout India, either on account of the narcotic derived from (a.) the resin, *charas*; (b.) the young tops and unfertilised female flowers, *gánjá* (or *gánja*); (c.) the older leaves and fruit-vessels, *bhanga*; or on account of the fibre, hemp; or the ripe seed from which an oil is prepared. *Ganja* is derived from the cultivated plant, reared in Eastern Bengal, the Central Provinces, and Bombay; *charas*, from the cultivated plant on the mountain tracts such as in Nepal, Kashmir, Ladakh, Afghanistan; *Bhanga* from the wild plant on the lower hills, especially in the North-West Provinces, the Panjáb, and Madras. In Europe, especially in Central and Southern Europe, the plant is cultivated on account of the fibre, and the seeds are eaten or made into oil. For some time the European form of the plant was supposed to be distinct from the Asiatic, the chief value of the latter consisting in its narcotic properties; but this distinction has now disappeared from the literature of the subject, since it could not be supported by botanical characters. The reduction became the more necessary when it was fully understood that, according to climate and soil, the Indian plant varied in as marked a degree as it differed from the European. On the mountains of upper India, for example, it yields a good fibre which the natives separate and weave into garments or twist into ropes, but its chief value in Kashmir and Ladakh consists in the fact that, just before maturing its flowers, the bark spontaneously ruptures and a resinous substance exudes. This is also found upon the young leaves, flowers, and fruits, and when rubbed off constitutes the narcotic *charas*. The same plant cultivated in the plains is found not to secrete its resin in this way, but instead it charges the young female flowers and twigs with the narcotic principle; this constitutes the *ganja*. It has been observed that if even one or two male plants are left in a field, the whole crop of *ganja* will be destroyed, since, with the fertilization of the flowers, the *ganja* almost entirely disappears. In other parts of India the narcotic property is not developed until the fruits are mature; leaves at this stage, and sometimes the fruits also, afford *bhanga*. With *Cannabis indica*, differing in so marked a degree according to the climate, soil, and mode of cultivation, it was rightly concluded that its separation from the hemp plant of Europe could not be maintained. We have here, in fact, one of the most notable illustrations of the effect of climate in changing the chemical processes which take place in the structure and physiological peculiarities of a plant. In most instances, a plant taken by man from one climatic condition to another, either dies quickly, or if it survives, it exists in a sickly condition. A few plants, however, such as the potato, the tobacco, the poppy, and the hemp, seem to have the power of growing with equal luxuriance under almost any climatic condition, changing or

Forms of hemp.

or modifying some important function as if to adapt themselves to the altered circumstances. As remarked, hemp is perhaps the most remarkable example of this; hence it produces a valuable fibre in Europe, while showing little or no tendency to produce the narcotic principle which in Asia constitutes its chief value.

The plant for one or other of these purposes is now extensively cultivated throughout Persia; in India, from the level of the sea in Bengal to the inner Himálaya at an altitude of 10,000 feet; in China, in Arabia, and in Africa, from the extreme south to the north, and on the mountains as well as on the plains; in the north-eastern portions of America and on the table-land of Brazil. It is also to be met with in Northern Russia even as far as Archangel. In England it not unfrequently occurs as a weed, springing up most probably from rejected birdseed.

The modes of cultivation and the nature of the soil required, depend on the purpose for which the plant is cultivated. This subject will accordingly be discussed later on.

### HISTORY OF HEMP.

#### *The Narcotic.*

*Indian Literature.*—"The earliest synonym appears to be bhanga, which occurs in the Atharva Veda, the last of the four scriptures of the Hindús. It is derived from a root which means "to break," and is supposed to imply the process of debarkation by which the fibres of the plant were separated from the stem. This would indicate that even at the remote period when the Veda in question was written, probably about 3,000 years ago, the use of hemp as a fibre-yielding plant was well known and the knowledge fully utilised. The Veda, however, reckons it along with the Soma, as one of the five plants 'which were liberators of sin,' and this would imply that its narcotic property was also well known. The word is used in the masculine form with a short final vowel, and not, as in later literature, with a long one. Both the masculine and feminine forms of the name are still in use by the people of the Himálayan regions, who call the male plant Phúl bháng, and the female Gúl (or gúr) bhanga. In the Kausitaki Brahminia of the Rig Veda, which is next in antiquity to the Atharva, the attributive form of the word Bhanga, derivable both from the feminine and the masculine forms, occurs both singly and in combination; one, Bhángájala, meaning a hempen net; and another Bhanga-sayana, a 'bedstead woven with hempen cords.' The masculine form occurs in the celebrated medical treatise of Susruta, in which the plant is described as a medicine for the accumulation of phlegm in the larynx and for some other diseases." "In the institutes of Manu the feminine form is used, and the plant is noticed for its fibres. In later works the feminine form prevails" (Mr. Hem Chunder Kerr). The curious fact of the popular opinion, that the ganja-yielding plants are males and the staminate or non-narcotic-yielding females, prevailing to the present day, would seem to corroborate the inference that in Asiatic countries during ancient times the plant was cultivated chiefly for its narcotic properties. Hence, in all probability, the habit of speaking of the narcotic in the masculine form of the name, and of the fibre in the feminine. As a matter of fact, the narcotic-yielding is the reverse to the popular belief; the male or staminate plants are rooted up as being non-narcotic, and the pistilate or female are allowed to mature, so that, botanically speaking, it is the female which yields the narcotic not the male. Not being fecundated, the female plants do not mature fruits and seeds, and are accordingly viewed as male. Bretschneider informs us that the male and female plants were recognised by the Chinese as early as 500 B.C. It may be here incidentally remarked that this distinction would seem to point to the idea that the ancient Chinese and Sanskrit writers were aware of the existence of male and female flowers centuries before the sexes of plants were realised in Europe.

The intoxicating property of the drug is implied in the names ánandá, "the joyous," harshini, "the delight-giver," madiní, "the intoxicator," and ganja and ganjání, "the noisy." The probable importation of the narcotic in ancient times into India in a prepared form, as it comes at the present day from Yarkand, is indicated in the name Káshmirí often applied to it in early literature. It is thus probable that the knowledge of the narcotic, or at least of charas, was brought to India across the Himálaya.

The narcotic.  
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*Classical Literature of Europe.*—The ancient Scythians seem to have been acquainted with the narcotic properties of the plant as well as with its fibre. Herodotus tells us that they excited themselves by “inhaling its vapour.” “Homer makes Helen administer to Telemachus, in the house of Menelaus, a potion prepared from nepenthes, which made him forget his sorrows. This plant had been given to her by a woman of Egyptian Thebes; and Diodorus Siculus states that the Egyptians laid much stress on this circumstance, arguing that Homer must have lived among them, since the women of Thebes were actually noted for possessing a secret by which they could dissipate anger or melancholy. This secret is supposed to have been a knowledge of the qualities of hemp” (Johnston, “Chemistry of Common Life,” 337).

Mythology.  
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*Mythological History of the Narcotic.*—“The notices of hemp in Arabic and Persian works are much more numerous. The oldest work in which it is noticed is a treatise by Hassan, who states that in the year 658 A.H., Sheik Jafer Shirazi, a monk of the order of Haider, learned from his master the history of the discovery of hemp. Haider lived in rigid privation on a mountain between Nishubar and Rama, where he established a monastery. After having lived 10 years in this retreat, he one day returned from a stroll in the neighbourhood with an air of joy and gaiety; on being questioned, he stated that, struck by the appearance of a plant, he had gathered and eaten its leaves. He then led his companions to the spot, who all ate and were similarly excited. A tincture of the hemp leaf in wine or spirit seems to have been the favourite formula in which Sheik Haider indulged himself” (Dymock, “Mat. Med., W. Ind.,” 604).

A curious story is told in the Hindú mythology about the origin of this plant. “It is said to have been produced in the shape of nectar while the gods were churning the ocean with the mountain called Mandára. It is the favourite drink of Indra, the king of gods, and is called vijayá, because it gives success to its votaries. The gods, through compassion on the human race, sent it to this earth, so that mankind by using it habitually may obtain delight, lose all fear, and have their sexual desires excited. On the last day of the Durga Pooja, after the idols are thrown into water, it is customary for the Hindús to see their friends and relatives and embrace them. After the ceremony is over it is incumbent on the owner of the house to offer his visitors a cup of bhang and sweetmeats for tiffin (lunch)” (U. C. Dutt’s “Mat. Med. Hind.,” 236).

*More Recent Historic Facts regarding the Narcotic.*—The use of hemp (bháng) in India was particularly noticed by Garcia de Orta (1563), and the plant was subsequently figured by Rheede, who described the drug as largely used on the Malabar coast. It would seem about this time to have been imported into Europe, at least occasionally, for Berlu, in his “Treasury of Drugs,” 1690, describes it as coming from Bantam in the East Indies, and “of an infatuating quality and pernicious use.”

“It was Napoleon’s expedition to Egypt that was the means of again calling attention to the peculiar properties of hemp, by the accounts of De Lacy (1809) and Rouger (1810). But the introduction of the Indian drug into European medicine is of still more recent date, and is chiefly due to the experiments made in Calcutta by O’Shaughnessy, in 1838-39. Although the astonishing effects produced in India by the administration of preparations of hemp are seldom witnessed in the cooler climate of Britain, the powers of the drug are sufficiently manifest to give it an established place in the pharmacopœia.” (“Flück. & Hanb., Pharmacog.,” 547-48.)

Fibre.  
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#### THE HEMP FIBRE.

The following extract may be here published as giving the most trustworthy facts which can be adduced regarding the history of the fibre: “According to Herodotus (born 484 B.C.), the Scythians used hemp, but in his time the Greeks were scarcely acquainted with it. Hiero II., King of Syracuse, bought the hemp used for the cordage of his vessels in Gaul, and Lucilius is the earliest Roman writer who speaks of the plant (100 B.C.) Hebrew books do not mention hemp. It was not used in the fabrics which enveloped the mummies of ancient Egypt. Even at the end of the eighteenth century it was only cultivated in Egypt for the sake of an intoxicating liquid extracted from the plant. The compilation of Jewish laws known as the Talmud, made under the Roman dominion,

dominion, speaks of its textile properties as of a little known fact. It seems probable that the Scythians transported this plant from Central Asia and from Russia, when they migrated westward about 1,500 B.C., a little before the Trojan war. It may also have been introduced by the earlier incursions of the Aryans into Thrace and Western Europe; yet in that case it would have been earlier known in Italy. Hemp has not been found in the lake dwellings of Switzerland and Northern Italy ("DC., Orig. Cult. Pl., 148.")

The Arabic Name for the plant, benj, and the Persian beng, seem but corruptions from the Sanskrit bhanga. The common name for hemp in Arabic is, however, kinnab or konnab, admittedly the origin of the Greek Kannabis and of the Latin Cannabis, and from this again the English word canvas. So, in a like manner, the Arabic hashish would seem to be given in allusion to the green intoxicating liquor, and allied to this would appear to be the Hebrew shesh, a word supposed by some to be a name for flax, but may have rather been applied to hemp, since it literally means "to be joyous." Persons who drink the draught are called hasháshíns (or bhangis, e.g., drinkers of green liquid). As a curious illustration of the origin of names or of words, it may be here remarked that Mr. Sylvester de Lacy, the well-known Oriental scholar, derives the modern English word "assassin" from hasháshín (or haschischin), persons who fortify themselves with hashish before performing certain ceremonies or perpetrating inhuman deeds. The word according to some would appear to have been originally used in Syria to designate the followers of "the old man of the mountains;" by others it came into European use during the wars of the Crusaders. Certain of the Saracen army having intoxicated themselves with the hashish, rushed fearless of death into the Christian camp, committing great havoc. It seems probable that the English form of the word was adopted at the latter date, but that the more Arabic form was known in Europe for some time previous. Hemp is alluded to in the "Arabian Nights" under its more ancient Arabic name, beng.

Canvas.

Assassin.

## CULTIVATION.

Cultivation  
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It has already been incidentally remarked that the cultivation of *Cannabis sativa* in India must naturally be referred to two sections: (a) Cultivation with a view to preparing some of the forms of the narcotic, and (b) cultivation on account of the fibre. It has also been stated that the hemp plant has, to a large extent, changed its character under Indian or rather Asiatic cultivation. It is very generally admitted, for example, that in the plains, while the narcotic principle is readily developed, the hemp fibre is but very imperfectly formed. Let it, however, be distinctly understood, that by hemp is here exclusively meant the fibre of *Cannabis sativa*. This remark is all the more necessary when it is added that in the Government returns of the Trade and Navigation of British India, the fibre of *Cannabis sativa*, as well as that of *Crotalaria juncea*, *Musa textilis*, and perhaps the fibres also of one or two other plants, are commercially returned as hemp, and the manufactures therefrom as hemp manufactures. To obtain the true hemp fibre, a rich soil and a high state of cultivation is required in a temperate climate. The plant will grow anywhere in India, and may be said to be naturalised in every province. This fact seems to have influenced the minds of the earlier writers on this subject, who uniformly urge that since it grows so freely in a wild state, it might be cultivated to any desired extent as a source of fibre. Dr. Stocks (one of the most careful observers India has ever had) wrote in 1848: "The plant grows well in Sind, and if it ever should be found advantageous (politically or financially) to grow hemp for its fibre, then Sind would be a very proper climate." The writer does not think that the question of its possible cultivation as a cold season fibre crop on the plains of India has been fully tested. There may be some localities where this might be found possible, and even remunerative, but so far as the published experiments go, like flax the hemp plant may be grown freely enough, but not as a source of fibre. The flax plant of the plains of India yields a superior oil-seed, and the hemp plant a valued narcotic, but neither justifies the expectation of becoming a profitable fibre crop. This fact would not seem to have been fully realised by writers in Europe, and on the one hand the existing cultivation of hemp as a source of narcotic has been confused with a supposed fibre production, while on the other the reports of the limited Himalayan cultivation as a source of fibre have been mistaken as the total Indian cultivation of the plant. The authors of the "Pharmacographia" say: "It is found in

Expectations  
regarding Indian  
Hemp.



Kashmir and in the Himalaya, growing 10 to 12 feet high, and thriving vigorously at an elevation of 6,000 to 10,000 feet." Balfour, in his new edition of the "Cyclopædia of India," while stating incidentally that the "plant is grown in Persia, Syria, Arabia, and throughout India," enters into an account of its cultivation in Garhwal, with the apparent object of proving that it is more extensively grown there than in the Panjab, but he makes no mention of the fact that the principal seats of hemp cultivation, as a commercial article, are in Eastern Bengal, the Central Provinces, and Bombay. The "Encyclopædia Britannica" has also fallen into the same mistake, and indeed illustrations might be multiplied to show that undue prominence has been given to the fact that the plant is grown in Garhwal, the Panjab, and Kashmir, the more so since by most writers the true regions of Indian cultivation have been, to a large extent, overlooked.

Unfortunately the available material is too meagre to allow of the subject being dealt with province by province, although there are doubtless different methods pursued in each. This difficulty fortunately does not exist with the Lower Provinces, since Mr. Hem Chunder Kerr, in his "Report on the Cultivation of and Trade in Ganja in Bengal (1877)," has placed in the hands of the public a valuable treatise which deals both with the cultivation of the plant and the preparation of the narcotic. Dr. Forbes Royle in 1855 issued his "Fibrous Plants of India," a work which treats of hemp at some detail, discussing mainly the cultivation pursued in Upper India. A more recent publication, Messrs. Duthie and Fuller's "Field and Garden Crops," gives a brief account of the cultivation in the North West Provinces. From these works, supplemented by several less important publications and Government reports, the following abstract regarding Indian cultivation has been prepared:—

#### (a) CULTIVATION FOR THE NARCOTIC.

*Bengal Cultivation.*—The method pursued in Eastern Bengal, according to Mr. Hem Chunder Kerr, is briefly as follows: After selecting the land for hemp cultivation, the preparation of the soil commences in March-April, but where this can be afforded, operations are started even earlier. The sites selected are those which are moist, but not shaded, and the soil a rich friable loam. The land is then ploughed from four to 10 times, the object being to free it as far as possible of all weeds. Fresh earth from the surrounding ditches or from any neighbouring low-lying land is thrown over the field, and it is freely manured with cow-dung. After a week this is ploughed into the soil, and the ploughing repeated as often as the means of the cultivator will admit of. The belief is that for hemp the land cannot be too often ploughed. The rains now set in, and the field is thoroughly flooded, the surrounding banks preventing the escape of the water. While inundated it is several times ploughed and harrowed. After the rains subside the ploughing is again repeated, and the soil thrown into ridges a foot high, the furrows being a foot in breadth.

*Nursery.*—It is customary for the cultivators to combine in the rearing of seedlings. This is done in a nursery selected on high land of a light sandy loam. The preparation of the nursery generally commences in May, after the first shower of rain. The plot is repeatedly ploughed, and if need be, harrowed, until, by August, the soil has been completely pulverised. On a sunny day the seed is sown broadcast, and by the latter end of September, the seedlings are about 6 to 12 inches high, and are then ready for transplantation. About 4 to 5 seers of seed are deemed necessary for every bigha of land to be cultivated with hemp.

*Transplantation.*—The seedlings are planted out 6 to 8 inches apart on the ridges prepared for their reception, after having been simply pulled up by the root; they are planted the same day in the field. (Dr. Royle says that for bhang the seedlings should be planted 9 or 10 feet apart.) Towards the end of October the ridges are opened out, manured with oil-cake and cow-dung, and thereafter reformed, so that freshly manured soil is thrown up around the plants.

*Treatment of the plants.*—Trimming of the plants commences by November. This consists in lopping off the lower branches so as to favour the upward growth of the shoots. The ridges are again re-dressed and manured, the furrows ploughed,

ploughed, and all weeds removed. At this stage the plants begin to form their flowers, when the services of an expert, known as the ganja-doctor (poddar or parakdar) are called in. This person passes through the field, furrow by furrow, cutting down all the male or staminate plants, or what are colloquially known as madi (female) plants. Speaking of the importance of this operation, Mr. Hem Chunder Kerr remarks: "The presence of a few madi plants in the field suffices to injure the entire crop, inasmuch as all the plants run into seed, and the ganja yielded by them is very inferior, and scarcely saleable." The destruction of the madi plants is, however, never so complete but that a few escape detection, the result being that a certain number of the female plants are fecundated, fruits and seeds being produced. These are thrashed out as far as possible in the manufacture of the drug, the quality of which may be judged of by the freedom from such impurities.

Fruits injure Ganga.

The female plants come to maturity about the beginning of January, but the ganja is not fully developed till a month later. The crop is sold in the field to the ganja dealers, who bring their own men to manufacture it. The crop intended to be made into what is technically known as flat ganja is reaped a few days before that intended for the round form.

In another page will be found an account of the processes of manufacture of the various forms of ganja, together with considerable details as to the extent of cultivation as a source of the various forms of the narcotic.

#### (b) CULTIVATION FOR THE FIBRE-HEMP.

*Indian Methods.*—Dr. Royle very appropriately remarks: "There is every reason for believing that the plant is of eastern origin, while there is no sufficient reason for thinking that the climate of Europe is so peculiarly suited to the production of its fibre as to exclude those of its native climes, especially where attention is paid to those where the plant is grown on account of its fibre, and those distinguished from the others where it is cultivated for its resinous and intoxicating secretion. The latter requires exposure to light and air. These are obtained by thin sowing, while the growth of the fibre is promoted by shade and moisture, which are procured by thick sowing." It has already been pointed out that the regions suited for ganja cultivation are perfectly distinct from those where it might be possible to develop an industry in the fibre. However much it may be regretted, it seems impossible to combine the two industries, and it is an accepted fact that unless utilisable as a paper stock, the immense amount of stems annually destroyed by the ganja cultivators must continue to be so.

For the fibre.  
338.

At the same time, Mr. Morris, in his account of the Godavery District, gives some interesting facts regarding the cultivation of hemp fibre. It is planted in November and cut by the end of March. It is grown in drills and never watered. Clay soils and those beyond the reach of inundation are those best suited. "About 2,200 bundles can be produced in one pulti of land, each bundle yielding  $1\frac{1}{2}$  viss of fibre, or a total of 3,300 viss or 412½ maunds, and is valued at 1 rupee a maund. The expenses of cultivation are estimated at R. 8-8, and those of the preparation of fibre at Rs. 100 a pulti of land. The bundles are buried in mud, and left to rot for about a week, when they are taken out and beaten in the water; and after all impurities are removed, the fibre is collected." The exports from the district are said to have been, in 1854-55, 4,269 cwt.

Godavery Hemp.  
339.

Unless there be some mistake, sunn-hemp, having been called "*Cannabis sativa*," for Mr. Morris gives that scientific name, as well as the vernacular name *Zanumu* for the fibre he is describing, this information is of the greatest interest, as it would show, what the writer was not aware of until recently, that hemp fibre was actually produced on the plains of India.

*Early Experiments in Hemp Cultivation.*—In 1802 the Government of India made various experiments on an extended scale to establish hemp fibre cultivation. European seed was imported, and farms and factories established, but finally abandoned. Recourse was had to improving the cultivation of the Indian stock. The cultivation and manufacture was carried on at Rishra, Cassimpore, Maldah, Gorackpore, Mhow, Rohilkand, and Azimgarh; under the experienced supervision of European hemp dressers. The result was everywhere unsatisfactory and the efforts were abandoned.

Inquiry was re-instituted in 1871 as to whether the rejected stems from ganja cultivation might not be utilised for fibre, but the result in this case was again unfavourable.

**Possible Prospects.**

*The possibility of more favourable results.*—In spite of these disheartening results it cannot be definitely stated that it is impossible that hemp fibre can be produced in India. The efforts alluded to were mainly directed to combining the two industries of producing resin and fibre, and the regions selected were accordingly those where it is now believed the plant does not develop its fibre. There may, however, be localities where further investigation might prove that it was possible to organise a commercial fibre industry. It is well known, for example, that the people of Kumaon and Garhwál grow the plant on account of its fibre. With the results of the experiments conducted at the beginning of the century before him, Dr. Royle still entertained the highest hopes of ultimate success. From a paper which appeared in 1839, in the "Transactions of the Agri-Horti. Society of India," Vol. VIII., page 15, the following passage may be reprinted, as it expresses pretty clearly Dr. Royle's view: "This (hemp) might be cultivated in suitable situations in India, in a manner similar to that adopted in Europe, or like that practised with its substitutes in India. The effect would undoubtedly be to produce a sufficiently long fibre, which would also be softer and more pliable, at the same time that it retained a great portion of its original strength, and probably in as large a quantity as is yielded by the sunn plant. Thus, an article might be produced, which, judging from the Indian samples, might enter into competition with the Russian product, and at all events afford much more valuable cordage than the several (usually considered) inefficient substitutes which are so extensive in India, and which, imported into England, sell only for 15 to 20 shillings per cwt., at the same time that the Russian, Polish, and Italian hems are selling for 42 to 50 shillings per cwt." In his "Fibrous Plants" Dr. Royle alludes to successful experiments of hemp cultivation in the plains, especially at Chittagong. But in most cases, as was proved with the plant reared at Saharanpur, it is admitted that the plains crop is far inferior to that reared on the hills. The opinion is therefore arrived at that if the cost of transmission from the hills to the sea-ports can be reduced, it might be possible to greatly extend the cultivation of hemp on the lower Himalaya. Mr. Atkinson, "Himalayan Districts," p. 800, gives a long and instructive account of the methods of culture, compiled chiefly from Huddleston and Batten's notes. There are said to be two varieties common in Garhwál, the wild and the cultivated. The former is practically useless either for the fibre or the drug. The cultivated form is grown in high land having a northern exposure and in well prepared and abundantly manured land close to the village sites. Occasionally freshly cleared forest land gives a crop for a year or two without the aid of manure. The plant does not flourish below 3,000 feet, as the heat of the valleys is prejudicial to its growth, and it seems to thrive best at from 4,000 to 7,000 feet in altitude above the sea. After being well prepared and freed from weeds, the ground is sown in May or June. During the growth of the plants the ground is once or twice dressed, and where necessary the plants thinned so as to leave a few inches between each. The plants ultimately attain a height of 12 to 14 feet, and from September to November the crop is regarded as mature. In warm situations the crop is sown later than May to June so as to save the seedlings from running into useless stalks during the heat and rain of the early period of its growth. In Nepal the sowing takes place from March to April, flower in July, and reach their full growth by August: if allowed to grow longer the fibre becomes hard and not suitable for manufactures. Messrs. Duthie and Fuller, in discussing the north-west Himalayan hemp fibre cultivation, allude to the fact that a form of charas is at the same time prepared, and Mr. Atkinson adds that "the farm of charas in Kumaon alone, during 1880-81, was sold for 3,357 rupees." It is commonly reported that the cultivation of the hemp-narcotics is prohibited in the North-West Provinces. In an early paragraph, No. 399, it has been shown that hemp fibre would appear to be cultivated in the Godavery District.

*Season of Sowing and Reaping.*—Messrs. Duthie and Fuller remark: "The seed is sown in May at the rate of 30 seers to the acre, and the plants are thinned

thinned out if they come up too closely, and are kept carefully weeded. By September they will have attained a height of 12 or 14 feet. In the hemp the male and female organs are contained in separate flowers and borne on separate plants. The male plants (called phúl-bhang) yield the best fibre, and they are cut a month or six weeks before the female plants (gul-bhang), which are allowed to stand until their seed ripens. The next process is the collection of the charas, which is done by rubbing the seed pods and leaves between the hands."

*European Cultivation for the Fibre.*—Dr. Royle and several other authors give accounts of the methods pursued in Europe in hemp cultivation. The limited space at the writer's disposal precludes this being entered into in detail, but the reader who may desire further information is referred to Spons' "Encyclopædia of Manufactures and Raw Materials" (1882), Vol. I., 934. It is stated by most writers that while the plant will grow almost anywhere in the temperate and sub-tropic regions of the globe, it can be made to yield a profitable fibre only when reared on rich soil, freely manured and repeatedly ploughed. "Alluvial lands, where sand and clay are intimately mixed, or friable loams, containing much vegetable matter, are well suited. Stiff cold clays are to be avoided. Over-rich soils produce coarse but strong fibre; light poor soils, when well manured, will bear the crop for several years in succession."

The best fibre is that raised in Italy, but it is generally stated that seed from Holland is most esteemed; well-grown English seed is perhaps equal to it. "Seed from the plains of India, though of good outward appearance, yields poor fibre for the first crop or two; but Himálaya seed is inferior to none." Constant change of seed is recommended, and good seed is described as plump and of a bright-grey colour.

Italian hemp.  
340.

"The fibre afforded by the male plants is tougher and better than that yielded by the females; it is usual to divide the harvest. The males are gathered as soon as they have shed their pollen, about 13 weeks after sowing; each is uprooted singly, care being taken not to injure the stem.

Male fibre.  
341.

"The fibre is separated either by retting or by breaking and scutching."— ("Spons' Encycl.")

#### *Properties and Uses of Cannabás sativa.*

From the stems, leaves, or flowers, and even the fruits, a resinous extract, of a powerful narcotic character, may be prepared. The inner bark affords the valuable fibre hemp. The seeds are occasionally eaten; they are much valued for feeding birds. An oil is expressed from them which is of some importance, but can scarcely be called commercial.

ECONOMIC  
PROPERTIES.

#### RESIN OR NARCOTIC.

There are primarily three forms of this substance, but under each there exist also local modifications, special preparations from these, and adulterants or imitations. The three forms are known as ganja, charas, and bhang. Ganja is the female flowering tops with the resinous exudation on these; charas the resinous substance found on the leaves, young twigs, bark of the stem, and even on the young fruits; bhang, the mature leaves, and in some parts of India the fruits also, but not the twigs.

#### BENGAL MANUFACTURE.

(1.) *Ganja.*—This is known in the trade as consisting mainly of two forms: flat ganja and round ganja. Speaking of the manufacture of ganja in Bengal, Mr. Hem Chunder Kerr says: "In February and March, when ganja attains its maturity, the cultivator proceeds to make arrangements for reaping the crop and preparing the drug. His first step is to present himself to the supervisor, show him the license under which he has grown the crop, and obtain his permission to remove the crop from the field." For flat ganja, cutting out of the plants commences in the morning; for round ganja, in the afternoon, and by the Hindus Thursday, and by the Muhammadans Friday, is considered the best day for commencing operations.

Ganja.  
342.

Flat.  
343.

*Flat-Ganja.*—The stems are cut with a sickle about 6 inches above ground, and are tied together by their ends and placed across a bamboo, and in this manner carried to the place of manufacture. In the preparation of flat ganja (*chapta ganja*) they are exposed to the sun till about 1 or 2 o'clock in the afternoon. The twigs are then cut into lengths of about a foot, the non-flower-bearing portions being thus cut off and rejected. If by any chance male plants (*khásiá*) have been brought from the field, these, together with any fruit-bearing female twigs, are carefully picked out and thrown away, the seeds if ripe being first retained for next year's crop. At dusk the selected flowering heads are laid on the grass and left overnight to the influence of the dew. At 2 o'clock of the following afternoon they are assorted in bundles of from three to 10 according to their size. These are arranged on a mat in a circular form, with their points directed towards the centre, and overlapping each other. The circle thus formed is about 14 feet in circumference. Upon this a number of persons, holding each other by resting their arms across each other's shoulders, commence to tread. They stamp and press down the flowering heads with their right foot, while holding them tight with their left. This operation is continued for three or four minutes, when the narcotic resin is pressed firmly among the flowers in the desired form. Fresh twigs are then arranged over those which have been pressed, and the treading repeated. This process continues until the ring rises to about a foot in height. Care, however, is taken not to place the resinous flowering-tops exactly on the top of each other, since this would result in the formation of an inextricable mass. Before the trampling commences the persons to be so employed salute the ganja before placing their feet on it. When the process is complete the treaders get down. Mats are placed over the sack, upon which one or two men sit down and remain for about half-an-hour. After this fresh mats are spread and the flowering twigs beaten two and two together to shake off the leaves or any fruits that may still remain, and are rearranged in a new circle, so that what was on the top before now forms the bottom layer of the new circle. The treading is repeated stage by stage until the stack is again covered by the mats, and men take up their inexplicable seat on the top. After this each twig is trodden upon separately, being placed for that purpose on a canvas cloth; by sunset the process is completed for the day's manufacture. Next day the treading is repeated with slight modifications of little importance in the peculiar method followed. The ultimate result of all this labour is that the resin and flowers are firmly consolidated into flat patches near the apex of the twigs, and the leaves and fruit vessels (if such exist) carefully removed.

The twigs are then carried to the homesteads and stacked, with the tips pointing inwards, and the stems thus exposed to be dried; when completed the top of the stack is carefully covered in with mats.

Round.  
344.

*Round Ganja.*—In the manufacture of round ganja greater care is bestowed. A larger amount of the twigs and leaves are rejected. Instead of being arranged in a circle they are placed on the ground in a straight line and just below a bamboo bar on which the men rest their arms and thus support themselves while treading. Instead, however, of tramping they now roll twig by twig so as to force the resinous matter into the form of a thin sausage shape near the apex of the twig. This rolling is repeated several times, and the twigs even taken up in the hands and individually trimmed, superfluous leaves, &c. being picked out, and when loose the resin pressed into the desired form by the fingers.

Chur or rora.  
345.

*Ganja Powder or Chúr.*—When perfectly dry both the flat and round ganja are next haled in a prescribed manner, and during this operation a certain amount of loose particles of the resinous matter falls off; this is known locally as *chúr*. Under the excise rules a separate rate is fixed for *chúr*. It is held to be more powerful than the round ganja, and therefore the duty on it is 4 rupees as compared with 3 rupees a seer on round ganja. The fragments which constitute *chúr* cannot be made to adhere, and although prepared at one and the same time with the pressed or rolled ganja and from the self-same plants, it is probable that these fragments exist in a slightly different chemical state, and probably more nearly resemble charas than ganja. *Chúr* is also known under the name of *rorá*.

Mr. E. T. Atkinson (in his "Himálayan Districts," p. 761) says of the ganja of the N.W. Provinces: "The ganja produced in Kumáon and Garhwál is considered

considered of little value, and is not, so far as I am aware, exported. The ganja consumed locally is imported from the lower districts. Two sorts of ganja are sold in these Provinces: the pattar and the bilúchar. The pattar is imported chiefly from Holkar's territories, and is of quality inferior to the Bengal ganja. It is purchased at from five to six rupees a maund in Indúr in the rough state," and "pays a duty of about four annas per maund on exportation to British territory." It is sold retail at from three rupees to four rupees a seer. The bilúchar variety is imported from Lower Bengal, and is sold at 10 rupees to 12 rupees a seer.

#### BOMBAY AND THE CENTRAL PROVINCES.

Although definite information cannot at present be obtained as to the details of the process of manufacture of ganja as followed in the Central Provinces and Bombay, it is probable that it differs but slightly from that narrated above as pursued in Bengal. Dr. Irving, in his "Materia Medica of Patna," however, informs us that there are two imitations of ganja, or perhaps more correctly, of charas. The one is obtained by evaporating the expressed juice of the plant, and the other an extract obtained by boiling the whole plant. To what extent these adulterants are sold separately or mixed with the pure drug it is difficult to learn, but as far as Bengal is concerned, it may confidently be stated that adulteration can alone take place when the intoxicant reaches the hands of the dealer. In the golás it is quite pure.

Mention of chúr, and of the extracts referred to by Dr. Irving, naturally lead to the consideration of:

(2.) *Charas*.—This may be defined as the resinous substance which naturally exudes from the leaves, stems, and fruits of the hemp plant (see No. 267) in more northern or higher regions, where the plant is accordingly grown in a colder climate than that of the ganja-producing districts of the plains. In another page (No. 336) it will be seen that Dr. Aitchison says that the resin collected from the leaves and flowers is in Turkistan called nasha—the charas of trade. Before being exported it is, however, very much adulterated, so that nasha and charas are practically two very different substances. Mr. Dalglish informs the writer that at Yarkand-Kashgar the charas is collected as a fine greyish white powder by beating the flowering twigs over a coarse cotton cloth spread on the ground. The crop is reaped about November, and the powder stored in small 2 to 4 lb. bags. About May these are sold to the traders, who cut the bags open and spread out the now partially agglutinated powder on cloths under the sun. It softens and deepens in colour, and is hard pressed into bags or bales 1½ maunds in weight (a half pony-load) ready for exportation. The quality is judged of by the amount of oil seen through the degree of transparency in a fragment flattened on the hand until it is of the thickness of paper, or by rolling a small piece into a cord and exposing it to the sun for a few moments. The oil is sucked on to the surface of the cord, the charas deepens in colour; but if pure, on being broken it seems to be composed of minute granules of the appearance of pure steel. With age, the oiliness is sucked out of the charas, or by being exposed, it is then valueless. Charas is in Yarkand adulterated with linseed oil and a powder of the hemp leaves.

From the above description it would appear as if Yarkand charas was not the resinous exudation from the leaves and stems, as in Sind, Kashmir, &c., but a powder formed on the flowers similar to the chúr of Bengal (see No. 257), and the garda (No. 271) of the Punjáb. In Kumáon and Garhwál the cultivators who grow the plant as a source of fibre are said to rub the fruits between their hands so as to remove the resin. This is regarded as a form of charas, and the out-turn of an acre is said to be four maunds fibre, worth eight rupees, and three seers charas, six rupees. Of Nepál it is commonly reported that a very fine quality of charas known as momea is similarly prepared. (See Church's "Ed. Johnston's Chemistry of Common Life"; Spon's "Encyclop."; "O'Shaughnessy," &c.) Dr. Gimlette, Residency Surgeon, Katmandu, Nepál, writes to the author, however, that the word momea, as applied to charas, is unknown at the present day in the vicinity of the capital. Speaking of the modes of collecting charas, as practised in Nepál, Dr. Gimlette adds: "I have been unable to verify the accounts of the collection of charas by means of leather coats worn

Imitations of ganja.

Expressed juice.  
346.

Decoction.  
347.

Charas.  
348.

Momea.  
349.



by men, who run about among the plants; this may possibly occur on the northern frontier of Nepal. Within a radius of 50 miles of Katmandu, the extract is collected by rubbing the young flowering tops between the hands in situ; one man is able thus to collect in a day two tolas weight. Charas is sold in the Katmandu bazaar at two rupees, in the Tarai markets at three rupees, per tola."

Momea of Nepal.  
350.

It is a remarkable coincidence, however, that a drug is sold in the bazaars of Katmandu under the name of momea or mimea. This, Dr. Gimlette says, is not a preparation of hemp. He thus describes it: "Momea is a mixture of dhup, oil, and lymph, the latter specially induced in the human subject by a certain drug. The preparation is also brought from Tibet, where human fat is said to be used as an ingredient. This curious drug is given internally in cases of wounds and ulcers along with ghi; dose one masha." It is noteworthy, in connection with Dr. Gimlette's discovery regarding human fat used in the manufacture of Nepal momea, that amongst the ignorant classes of Northern India a superstition prevails that they may be captured and carried off to some distant land to be made into momea. This fact has been alluded to by various officers in their reports on the objections raised by the poorer classes against emigration. Speaking of this subject, Colonel D. G. Pitcher, in a report dated June 1882, writes: "The feeling of the native community on the subject of emigration is, for the most part, nil, or a ludicrous distorted image, in which the coolie hangs head downwards like a flying fox, or is ground in mills for oil." "The natives have in some parts of the country a strong belief that coolies are suspended head downwards to facilitate the extraction from them of oil." In a recent expedition into Kullu this same superstition was brought out in an alarming manner. (See p. 6, *Gazette*.)

Mumiai.  
351.

It seems probable that the word momea has been erroneously applied to hemp, and in partial support of this suggestion it may be added that the word mumiai is, in Afghanistan, applied to a substance which apparently has no relation to the narcotic of hemp. Ball, in his "Economic Geology," says of this substance: "In Afghanistan it is believed that there are several localities where bituminous products occur, as they are commonly sold as drugs in the bazaars of that country. According to Captain Hutton ('Cal. Jour. Nat. Hist., Vol. VI., 601'), a mineral pitch called 'mumiai' by the natives, which is used for external application, is found in the Shah Makhsud range. A substance supposed to be this same mumiai, otherwise called rock chetny, which was obtained by Lieutenant Conolly as an exudation from a fissure in a rock in Ghazni, was analysed by Mr. Piddington, who concluded, in spite of its savoury name, that it was composed of the excreta of birds, more probably of bats, mixed with salts of lime. There was no trace of bitumen or sulphur. In fact, this substance was no doubt similar, as regards its origin, to the reputed discovery of petroleum in the Madras Presidency." (Ball, page 126.) Baden Powell ("Panjab Products, pages 22, 104"), alludes to momyai as a black substance, obtained from Kashmir, consisting "principally of clay, which, however, burns feebly and softens slightly to the flame of a lamp, giving out a peculiar empyreumatic odour." In the chapter devoted to Panjab medicinal substances, he again alludes to momyai while speaking of a substance exhibited under that name: "This is in reality a dry mass of tar. Real momyai is said to be rarely met with; it is supposed to be of great efficacy in healing bones, and is in fact an 'osteocolla.' It is said to come from Persia, where it exudes and floats on the surface of a certain spring, where it is collected and monopolised by the Government, who sell it at a high price." Mr. Ribbentrop, Inspector General of Forests, showed the writer a substance which, in all probability, was mumea, or allied to mumea. This was procured in Chumba State, where it was found to exude from a crack on the face of a high rock.

Charas.

Momyai.  
352.

353.

354.

There are thus numerous allusions to substance or substances known in the bazaars of India under the name momea, but in none of the published accounts of this drug is there the slightest reference to its being a product of Indian hemp, although in the early literature of that narcotic it is repeatedly stated that a pure waxy form of charas obtained from Nepal is sold under the name of momea.

Charas from Sind.  
355.

Charas is collected in Sind and in Central India by causing men to run through the hemp fields. They are said to be generally clad in leather aprons to



to which the resin adheres. but in some cases are reported to have their bodies first oiled and then to run naked through the fields. In either case the charas thus collected is scraped off, and made into cakes, in which it is sold. The chief supply of charas to India comes, however, from the trans-Himalayan regions. Particulars regarding this trade will be found in a further page, but in concluding the present account of this form of the narcotic, the following extract may be here given from Mr. Baden Powell's "Panjab Products," in which, it will be seen, the substance there referred to is most probably more nearly related to chûr than to charas. It is prepared from the bhang-yielding plant:—

"There is a kind of charas called 'garda' which is much in use, and of this again there are three sorts:—'surka,' 'bhangra,' and 'khaki.' When the bhang has been gathered and placed in a store-house as soon as it is dry, persons go in with their faces covered with a thin cloth, which enables them to breathe without inhaling the dust which results from the process they perform. Next the heaps of dry bhang are covered over with a fine cloth, and the operators, putting their hands under the cloth, begin stirring about the bhang, and making hay of it. Soon a fine dust flies out, and filling the room, settles down on the surface of the cloth spread over the heaps. When all the dust has been shaken out and settled on the cloth, the cloth is itself taken out and shaken: a dust falls down, which is of the best quality, and of a reddish colour. This is collected and kneaded with a little water into a cake, and forms the best charas, which is called 'surkhai'; more frequently the dirt that is shaken off is of a greenish tint, like the bhang itself, and this collected forms 'bhangi charas.' Lastly, the powder which adheres to the cloths, and is scraped and shaken off, forms the worst kind, called khaki."

(3.) *Bhang, or Siddhi, Sabji and Sabzi.*—Apparently the wild plant is the chief source of this form of the drug, which consists of the mature leaves and in some parts of India of the fruits also. The resin is apparently not extracted from these and sold or used in that form; the leaves are directly employed in the manufacture of the preparations in which bhang constitutes the form of the narcotic. According to some writers the wild plant does not yield bhang (see Mr. Atkinson's "Himalayan Districts"). The comparative uniformity, throughout India, of the retail price of bhang, namely, 8 to 12 annas a seer in the provinces where duty is realized over and above the licenses to sell, and four annas (except in the North-West Provinces) where this is not the case, is of considerable importance when the disproportion in the revenue credited to Government from this article is taken into consideration.

#### INDIAN PREPARATIONS FROM HEMP.

*Forms of Indian Hemp.*—As already explained there are three forms of this poisonous drug: (a) Ganja, the agglutinated female flowering tops and resinous exudation on these; (b) Charas, a resinous substance found on the leaves, young twigs, and bark; and (c) bhang or siddhi, the mature leaves, and in some parts of India the fruits also, and even the very young twigs, but not the stems. Ganja and charas are smoked, and bhang is either used in the preparation of the green intoxicating beverage, hashish, or in the manufacture of the sweetmeat known as májun (vulgarly májun). Bhang is much weaker than either ganja or charas, and by many is supposed to be much less injurious. It is sold in Bengal at from 4 to 8 or 12 annas a seer, whereas ganja and charas cost from 4 rupees to 25 rupees a seer. Bhang, being collected chiefly from the wild plant, is extensively used all over India, the bulk of the consumption entirely escaping duty. This is mainly due to the fact that it would be impracticable to hold a man responsible for the existence of a wild plant growing within a certain radius of his hut, and it would be impossible to prohibit him gathering, from such a plant, the daily quantity used by himself and family. This is precisely the state of affairs which prevails over a great part of India, and, indeed, on the lower slopes of the Himalaya and up to an altitude of 8,000 feet, the plant is often so plentiful as to be extensively used as bedding for cattle. The greatest difficulty exists, therefore, in regulating the consumption of bhang, but practically no such difficulty exists

Central India.  
356.

Trans-Himalaya.  
357.

Garda or Panjab  
Charas.  
358.

Surkhai, Bhangra,  
and Khaki.  
359.

360.  
Bhang

SMOKING MIXTURES.  
361.

Hashish.  
362.  
Májun.  
363.

PRICES.

Bedding for cattle.

with regard to ganja and charas. The last-mentioned narcotics can be produced only from the cultivated plant, and the consumption can therefore be regulated by law. The Excise Act provides that licensed persons may cultivate the plant, prepare the narcotics, and retail these to the consumer. The right to vend is sold by public auction, a person purchasing thereby the sole right, for one year, to all or so many of the shops in a district. Any person, other than a licensed dealer, having in his possession more than a very small quantity at one time is liable to prosecution and fine. This system of farming the wholesale and retail shops exists all over India, Madras being an exception to the rule, since in South India no revenue whatever is credited to Government from these drugs. The administrative arrangements which are made in each province for levying excise duties on hemp will be found under the heading Narcotics.

#### THE FIBRE—HEMP.

FIBRE.  
364.

When mature.

Lignification.

Experiments to be  
performed in India.

The reader is referred to the account given of the cultivation of the hemp plant in a preceding page. It will there be found that a considerable amount of information has been given as to the early experiments made to extend the cultivation in India of *Cannabis sativa* as a source of fibre; a possible still further development has also, to a certain extent, been dealt with. It has been urged that the regions where the plant is grown for its narcotic, ganja, should be carefully distinguished from those where the plant may be found to form fibre. But an equally important fact remains to be investigated and thereafter clearly kept in view, namely, the age of the plant and season of the year when the fibre is at its best, in both the temperate and tropical regions of India. It cannot be disguised that the defects complained of in many of the reports on Indian hemp cultivation, against the quality of the fibre produced, are traceable to ignorance as to the period when lignification is reached by the Indian plant. The season of sowing, period of repeating, and modes of culture, practised in Europe have, apparently, been forced on the plant in India, and the suggestion is accordingly offered that the brittle character complained of, against the resulting fibre, may have been due to the fact of the plant reaching in India the mature state of the fibre at an earlier stage of its growth than in European countries. Thus, for example, it is reported that the plants experimented with on the plains of India, at Saharanpur, grew vigorously, attained a height of 12 feet, and gave every promise of proving successful. When reaped, Dr. Falconer, however, reported that "the hemp-fibre did not retain the strength or flexibility which characterise it in the Himalayas." Similar results were obtained at Agra and in various parts of Bengal. The chemistry of fibre and of the process of fibre-forming within the plant has, during recent years, reached a high development. To arrive at a definite understanding as to whether the plains of India can or cannot produce good hemp, it would be necessary to carry out a series of systematic experiments in certain selected districts in each province. The seed would have to be sown and the plant cultivated according to a uniform and pre-arranged plan. From a certain stage, say after the plants had attained a height of two feet, a certain number of the plants from each field would have to be microscopically and chemically examined once a fortnight, right through their subsequent growth, or until in each locality the period when lignification was reached by the plants had been determined. It would also be desirable, in such experiments, to make several sowings, so as to determine the best period for sowing, since much would depend upon the cultivation being so regulated that the fibre would reach maturity during the period of the year best suited to the development of fibre. Without some such experiments being performed we must remain in ignorance with hemp as with flax, whether or not the peculiar climate and soil exists in India on which either of these fibres could be produced on a commercial scale. Up to the present day, the experiments which have been made have either failed to discover such regions or were imperfectly conducted, for, with the exception of certain limited tracts of the Himalayas, no part of the plains of India can be said to have been discovered in which there is the least hope of hemp or flax cultivation becoming of much importance (*see* Remarks as to Hemp in Godavery District, No. 339.)

In portions of the North-West Himalaya the hemp plant has been cultivated for its fibre for a very long time. Mr. Atkinson gives a brief but practical account of this industry in his "Himalayan Districts" (p. 799). "The possibility," says that author, "of attaining success in the cultivation of hemp in these provinces was pointed out by Dr. Roxburgh as early as 1800, and on the cession of these provinces, skilled Europeans were sent to carry on experiments in the Muradabad and Gorakhpur districts. In Garhwal and Kumaon its cultivation was encouraged, and for many years the East India Company procured a portion of its 'annual investment from the Kumaon hills in the shape of hemp.' With the abolition of the Company's trade the cultivation languished, and is now entirely dependent on the local demand, which, however, is by no means small." "The male plant yields only fibre from which the bhangel cloth of Garhwal is manufactured; also called kothla, bora, and gaji, and the ropes (sel) for bridges."

Messrs. Duthie and Fuller, speaking of the hemp fibre of these provinces, say that after harvest "the stalks are then laid in water to promote a fermentation which will allow the bark to strip easily; on being taken out they are beaten with mallets to loosen the bark, which is then detached by hand in strips, and, after a second beating, breaks up into a fibre, which is made up into hanks for sale. In some places the fibre is boiled in potash and bleached before spinning. The principal things manufactured from it are hemp cloth (bhanga or bhungela), and the ropes which are used for the swing-bridges over hill-streams. The cloth makes an admirable material for sacks, and is largely used in the grain trade on the Nepal frontier; and latterly, in the export of potatoes from Kumaon. It also furnishes a large portion of the hill population with a characteristic article of clothing—a hemp blanket, worn like a plaid across the shoulders, and fastened in front with a wooden skewer."

SEPARATION of the FIBRE.

It is commonly stated by European writers that the fibre from the male plant is superior to that obtained from the female. It is urged that particular care should be taken to strip the plant in dry weather; should the fibre get wet it is certain to heat and get almost totally spoiled. The method of platting the fibre into long tails, as pursued by the hill tribes of India, lessens the fibre very much, since it increases the labour in cleaning it, each hank requiring to be opened out by the hand.

Defects of the Indian.

*Hemp Substitutes.*—Hemp is mainly, if not entirely, employed in the manufacture of ropes, twine, and nets. As has already been urged, care must be taken, however, to distinguish the true hemp fibre from the numerous substitutes for it which are often commercially grouped with the true article. Thus, for example, we have in India Sunn-hemp (*Crotalaria juncea*), Bowstring-hemp (*Sansevieria zeylanica*), and Manilla-hemp (*Musa textilis*). In European commerce there are, besides these several other fibres, known as hems, such as Canada-hemp (*Apocynum cannabinum*), Kentucky-hemp Jabbalpur-hemp (also *Crotalaria juncea* (*Urtica canadensis* and *U. cannabina*, &c.).

Hemp Substitutes.  
365.

*European True Hemp.*—Russia, even to the present day, holds the first place among hemp-producing countries, although, since Russian hemp first became an article of extensive demand, nearly every country in the world has attempted the cultivation of the plant and the manufacture of its own ropes and twine. Where this competition proved comparatively hopeless, substitutes were brought forward, and at the present day the most extensively-used fibres in the rope trade may be said to be hemp, coir (or the fibre from the outer layer of the cocoa-nut), Manilla-hemp, cotton, and sunn-hemp. Italy produces the finest hemp; France is, perhaps, next in importance, then Great Britain, Servia, Germany, and of Asiatic countries, China is reputed to produce good hemp.

European hemp.  
366.

#### INDIAN FOREIGN TRADE IN HEMP.

The following figures as to the value of the Indian trade in "hemp" have been extracted from the "Statement of the Trade and Navigation of British India,"

India," regarding hemp, but the bulk of the imports of raw hemp fibre are, in all probability, Manilla hemp, and of the exports sunn-hemp :—

			Foreign Hemp Imported.	Foreign Hemp Exported.	Indian Hemp Exported.
			Rs.	Rs.	Rs.
Raw hemp. 367.	Raw Hemp	1881-82	1,10,875	—	5,59,112
		1882-83	1,82,993	—	4,30,325
		1883-84	1,76,765	—	6,85,316
		1884-85	2,14,118	—	6,82,679
		1885-86	1,96,052	—	9,88,825
Manufactures. 368.	Manufactured Hemp (excluding cordage.)	1881-82	10,179	4,182	1,409
		1882-83	27,090	8,857	3,176
		1883-84	32,570	4,548	6,510
		1884-85	41,356	150	3,129
		1885-86	42,810	323	3,205
Cordage. 369.	Cordage and rope, excluding jute, but otherwise the bulk probably Manilla Hemp and true Hemp	1881-82	3,22,485	24,886	3,25,178
		1882-83	4,31,693	15,586	2,84,106
		1883-84	3,90,584	11,198	4,92,068
		1884-85	3,52,413	13,076	3,53,389
		1885-86	3,24,519	7,437	3,28,320

FOREIGN Trade in Manufactured and Unmanufactured Hemp, excluding Cordage.

YEAR.	Imports.	Exports and Re-exports.
	Value.	Value.
	Rs.	Rs.
1881-82 - - - - -	1,21,054	5,64,703
1882-83 - - - - -	2,10,083	5,42,358
1883-84 - - - - -	2,09,335	6,96,374
1884-85 - - - - -	2,55,474	5,85,958
1885-86 - - - - -	3,38,862	9,92,353

Imports.  
370.

DETAIL of Imports, 1885-86.

Province into which Imported.	Value.	Country whence Imported.	Value.
	Rs.		Rs.
Bengal - - - - -	1,33,235	United Kingdom - - -	83,431
Bombay - - - - -	1,01,600	China - - - - -	1,23,474
Madras - - - - -	1,183	Phillipines - - - - -	2,609
Sind - - - - -	2,844	Straits Settlements - - -	17,827
		Other Countries - - - - -	11,521
<b>TOTAL - - - Rs.</b>	<b>2,38,862</b>	<b>TOTAL - - - Rs.</b>	<b>2,38,862</b>

Exports.  
371.

DETAIL of Exports, 1885-86.

Province from which Exported.	Value.	Country to which Exported.	Value.
	Rs.		Rs.
Bengal - - - - -	3,11,551	United Kingdom - - -	6,78,607
Bombay - - - - -	6,31,444	Belgium - - - - -	2,56,566
Madras - - - - -	49,358	Persia - - - - -	11,438
		Arabia - - - - -	15,698
		Other Countries - - - - -	30,044
<b>TOTAL - - - Rs.</b>	<b>9,92,353</b>	<b>TOTAL - - - Rs.</b>	<b>9,92,353</b>

It has been found impossible to give the quantities, since the raw fibre is expressed in weight, cloth in pieces, and rope in balls of various lengths and weights.

## OIL.

*Oil.*—The seeds, when expressed, yield a pale, limpid oil. They contain of this oil from 25 to 34 per cent. This oil is at first greenish or brownish-yellow; but the colour deepens when it is exposed to the air. The flavour is disagreeable, but the odour is mild. It is, however, said to make a very bad-smelling and deep-coloured boiled oil, and on this account it is never used in England, although extensively so in East and North Europe as a paint and varnish oil. In Russia it serves, in a great measure, the purpose of lamp-oil, but is chiefly employed in the manufacture of soft-soaps, inferior to that from linseed oil. It has a specific gravity of 0.9252 at 15°C.; it thickens at—15°C., and solidifies at—25° to—27.7°C. It dissolves in boiling hot water and in 30 parts of cold alcohol.

Hemp seed oil.  
372.

## MEDICINE.

*Medicine.*—The various forms of the drug have already been described, namely, bhang, ganja and charas. Ganja, or the dried flowering female tops, constitute the officinal parts in European pharmacy. From these an alcoholic extract is prepared, known as *Extractum Cannabis Indicæ*, and from this a Tincture is also made.—The use of Indian-hemp in European practice has greatly decreased of late years, owing to a feeling of insecurity as to the quality of the article. It is commonly recorded that no reliance can be put upon the uniformity in strength. The writer, at a meeting of the Royal Pharmaceutical Society of Great Britain, recently expressed the opinion that the heavy fiscal restrictions now imposed on Bengal ganja had, in all probability, diverted the export trade from Bengal to Bombay, so that, instead of the carefully-cultivated Bengal article finding its way to Europe, the much inferior, but infinitely cheaper, ganja of Bombay and the Central Provinces was, in all probability, that which was now used in European Pharmacy. The "Chemist and Druggist," commenting on this subject shortly after, recommended the suggestion as worthy of attention, and added:—"The price of Bengal ganja may be prohibitive, but the whole subject should be considered by authorities." There would seem little doubt that the high reputation of the drug once enjoyed might be recovered by greater care in selecting the article, but there is, perhaps, no other commodity in India that is produced in a larger number of forms and qualities, or which, in the hands of the retail dealer, is subjected to a greater degree of adulteration. The only guarantee an exporter can have is to purchase his ganja direct from the Government golas of Bengal, not even allowing the article to pass through the hands of a wholesale ganja-dealer or "middle-man" of any kind. If the article be shipped under a permit direct from the gola it is believed little complaint would be raised as to the uniformity in strength, but none but that which is registered as of the first quality should be purchased for medicinal purposes. From what the writer has been able to learn, it would be even preferable to use for European Pharmacy the chur or the dust obtained on packing and handling round ganja rather than round ganja itself; flat ganja should be resorted to with caution, and charas, or momea, should never be employed, nor round ganja in which ripe fruits are found with the flower heads.

MEDICINE.  
373.  
Indian hemp.  
Extract Indian hemp  
374.

Tincture.  
375.

Chur or round Ganja  
best suited for  
Pharmacy.  
Flat Ganja and Chara  
should be avoided.

*Medicinal Properties and uses of Indian Hemp—*

The Pharmacopœia of India, describes the drug as primarily stimulant, and secondarily anodyne, sedative, and antispasmodic. It is also said to be narcotic, diuretic, and parturifacient. It has been used with advantage in tetanus, hydrophobia, delirium tremens, ebrietas, infantile convulsions, various forms of neuralgia, and other nervous affections. It has also been employed in cholera, menorrhagia, and uterine hæmorrhage, rheumatism, hay fever, asthma, cardiac, functional derangement, and skin diseases attended with much pain, and pruritus. In lingering and protracted labours, depending upon atony of the uterus, it has been employed with a view of inducing uterine contractions.

It is admitted by most Indian physicians to be of special merit in the treatment of tetanus and cholera, and has not the injurious after-effects (constipation and loss of appetite) which but too frequently result from the use of opium. Its action is, however, very similar to that of opium, and it is accordingly stated that a habitual opium-eater may take large quantities of hemp without injurious consequences.

Sir William O'Shaughnessy was the first European writer to draw prominent attention to the peculiar properties and actions of the hemp-narcotics. He experimented with these in Calcutta and published his results. The reader is

referred

referred to his "Bengal Dispensatory" and to a "Memoir on the preparations of Indian hemp," in the Transactions of Medical and Physical Society of Calcutta for 1839, and to two papers in the "Journal of the Asiatic Society," Vol. VIII., of the same year. Shortly after the appearance of these most exhaustive accounts, the drug began to be experimented with in Europe.

Ainslie, in his "Materia Indica," 2nd Vol., gives an interesting account of the drug, and, according to him, the majun of South India, in addition to the ingredients of the Bengal article, contains datura and nuxvomica. Dr. Stocks says that the best form of bhang met with in Sind is that known as bubakai, from the town of Bubak near Lake Manchhar. He further adds, that the majun of Sind is made up of some 20 to 30 different ingredients, of which datura and opium are frequent. In some parts of India a beer is brewed with bhang, and this, together with bhang itself, majun and other preparations, are often employed in Native pharmacy.

Professor Christison published the following valuable remarks, derived from his personal experience with this drug:—"I have for some years," he observes, "used a very good alcoholic extract, sent to me from Calcutta 20 years ago, and still as powerful as ever to subdue pain, obtain sleep, and put an end to spasm in circumstances under which morphia either did not suit or was objected to by the patient, and after wide experience with it I am quite satisfied that it is an excellent substitute for it, if given in sufficient doses. The difficulty is, to be always sure of the quality of the extract, or rather of the ganja from which the extract is obtained. I have known two grains of my alcoholic extract, given in the form of tincture, put an end, promptly and permanently, to the agonising pain caused by biliary calculus impacted in ducts; and there can be no more unequivocal test than this of the potency of an anodyne. I have long been convinced, and new experience confirms the conviction, that for energy, certainty, and convenience, Indian hemp is the next anodyne hypnotic and anti-spasmodic to opium and its derivatives, and often equal to it." Dr. Christison considers that a well-prepared alcoholic extract is the best of all forms for use, but it requires to be prepared from ganja, not too old, collected in the right district, and at the right season. The ordinary resin (charas) is generally very impure and untrustworthy." (Pharm., India)

The early writers express almost the same opinions as were arrived at by the modern European physicians. According to the author of "Makhzan":—"The leaves make a good snuff for deterring the brain; their juice applied to the head removes dandruff and vermin; dropped into the ear it allays pain and destroys worms; it checks the discharge in diarrhoea and gonorrhoea, and is diuretic." The powder of the leaves is applied externally to fresh wounds and sores, and is used to promote granulation; a poultice of the whole plant is applied to local inflammations, erysipelas, neuralgia, &c. The dose of the leaves is 48 grains when administered internally." (Makhzan, Article Kinnab, see Dr. W. Dymock, Mat. Med. West India).

The medicinal properties of hemp, in various forms, are the subject of some interesting notes by Mirza Abdul Russac:—"It produces a ravenous appetite and constipation, arrests the secretions, except that of the liver, excites wild imagining, a sensation of ascending, with forgetfulness of all that happens during its use, and such mental exaltation, that the beholders attribute it to supernatural inspiration.

Of its utility as an external application in the form of a poultice, with milk, in relieving hæmorrhoids, and internally in gonorrhoea, to the extent of a quarter drachm of bhang." He further states that the habitual smokers of ganja generally die of diseases of the lungs, dropsy, and anasarca; so do the eaters of majun and smokers of siddhi, but at a later period. The inexperienced, on first taking it, are often senseless for a day, some go mad, others have been known to die.

Dr. U. C. Dutt says, that according to the Sanskrit writers:—"The leaves of Cannabis sativa are said to be purified by being boiled in milk before use. They are regarded as heating, digestive, astringent, and narcotic." "In sleeplessness, the powder of the fried leaves is given in suitable doses for inducing sleep and removing pain."

*Special Opinions.*—§ "Used as anodyne, antispasmodic, diuretic; leaves may be employed in dose of 20 grains" (Assistant Surgeon, Nehal Sing, Shaharanpur). "During the last twelve months I have used Cannabis sativa with great success in the treatment of acute dysentery; similar results were obtained by other  
medical

Uniformity in  
quality.

Leaves.  
376.

Dysentery.



medical officers of this station, who tried it at my request. The dose was, of the tincture, 15 or 20 m., three times a day (Surgeon S. F. Rennie, Cawnpore.)

"I have found a poultice of the bruised fresh leaves, slightly warmed, very useful in affections of the eye, attended with photophobia. Natives also use the poultice in piles" (Assistant Surgeon Bhagwan Dass (2nd Punjab).

Affections of the eye.  
Piles.  
Nasha. 377.

"The resin collected from the leaves and flowers in Turkestan is called Nasha, and this ought to be the Charas of the trade, but it is terribly adulterated. The plant is called in Turkestan kaudir, and the oil kandiryak. The oil extracted from the seed is in Kashmir considered as a valuable remedy, applied by rubbing in rheumatism" (Surgeon-Major F. E. T. Aitchison, Simla).

Oil used in  
rheumatism.

"Used in the form of 'sidhi' in small quantities, it is a very good stomachic tonic, useful in atonic dyspepsia and diarrhoea. In large quantities, exhilarant at first, depressing subsequently. Long continued use of ganja is a prominent cause of insanity" (Civil Surgeon D. Basu, Faridpur).

"Used to produce sleep in certain cases in which opium is contra-indicated. It does not induce nausea, constipation, or headache as opium does. Valuable as a remedy for sick headache, and especially in preventing such attacks. It removes the nervous effects of a malady. Useful in malarial, periodical neuralgias. Valuable in the treatment of the sleeplessness and restlessness of acute mania, in whooping-cough, and in asthma, in dysuria, and in relieving pain in dysmenorrhoea" (Dr. E. G. Russell, Superintendent, Asylums, at Presidency General Hospital, Calcutta).

Acute mania.

"Commonly used as a narcotic; a few grains of the leaves called siddhi, rubbed in with cardamon and other spices, to allay pain; taken as a drink habitually, by many, for intoxicating purposes; may be used as an anodyne; it increases appetite; is an aphrodisiac; and increases the activity of the brain, producing better flow of thoughts, and deep meditation, but often wild reveries and causeless laughter. A small quantity of the leaves, mixed with other drugs and spices, forms an useful compound in diarrhoea and indigestion of children" (Assistant Surgeon Shib Chunder Bhattacharji, Chanda, Central Provinces).

"The leaves, which are known as bhang, are used to check diarrhoea; an extract is prepared from them; it is made into confection, and used for narcotic purposes" (Surgeon-Major Robb, Civil Surgeon Ahmadabad). "Used for asthma and in tetanus, dose  $\frac{1}{4}$  to 2 grains, with sugar well fried in ghi and mixed with black pepper, given, in cases of chronic diarrhoea, with poppy seeds in dysentery, with asafetida in hysteria" (Surgeon W. Barren, Bhuj, Cutch).

Hysteria.

"Very often used by natives in some parts of this Presidency as an aphrodisiac, and, I believe, in some cases, successfully" in the form of 'Majun' i.e., a kind of pill-mass containing various drugs. (Surgeon J. N. Parakh, Bombay). "The leaves, made into a poultice, used in orchitis; also dried leaves, warmed, and used for fermentation" (Civil Surgeon S. M. Shircore, Murshedabad).

Orchitis.

"Used frequently by all hospital assistants, particularly for asthma and other paroxymal affections. In cases of chronic colic I have found the extract in one-grain doses with  $\frac{1}{4}$  grain of Ipecac. to produce wonderful effects" (Doyal Chunder Shome, Campbell Medical School, Sealdah, Calcutta). "More commonly used in this country to produce intoxicating effects, than for its medicinal properties in smaller doses" (Dr. G. Price, Civil Surgeon, Shahabad).

Asthma.  
Chronic cholera.

"It is also used in the form of tincture for checking ague fits, and is employed by native physicians in the form of electuary as an aphrodisiac, in cases of impotence, spermatorrhoea, and incontinence of urine. Taken in the form of bhang it acts on the kidneys as a powerful diuretic, and on the liver as a mild cholagogue" (Civil Surgeon F. H. Thornton, B.A., M.B., Monghir). "Dried tender leaves and flowering tops with sugar, black pepper powder, and with or without opium, proves highly beneficial in dysentery." (Civil Surgeon E. W. Savige, Rajamundry, Godaveri District).

Ague fits.  
Impotence.

*Chemical Composition.*—"The most interesting constituents of hemp, from a medical point of view, are the resin and volatile oil.

CHEMICAL  
COMPOSITION.

"The former was first obtained in a state of comparative purity by T. and H. Smith, in 1846. It is a brown, amorphous, solid, burning with a bright white flame and leaving no ash. It has a very potent action when taken internally, two-thirds of a grain acting as a powerful narcotic, and one grain producing complete intoxication. From the experiments of Messrs. Smith it seems impossible to doubt that to this resin the energetic effects of Cannabis are mainly due.

"When water is repeatedly distilled from considerable quantities of hemp, fresh lots of the latter being used for each operation, a volatile oil, lighter than water, is obtained together with ammonia. This oil, according to the observa-

tions



Cannabene. 378.

tions of Personne (1857) is amber-coloured, and has an oppressive, hemp-like smell. It sometimes deposits an abundance of small crystals. With due precautions, it may be separated into two bodies, the one of which, named by Parsonne Cannabene, is liquid and colourless, with the formula  $C_{18}H_{30}$ , the other, which is called Hydride of Cannabene, is a solid, separating from alcohol in platy crystals, to which Personne assigns formula  $C_{18}H_{22}$ . He asserts that Cannabene has indubitably a physiological action, and even claims it as the sole active principle of hemp. Its vapour, he states, to produce, when breathed, a singular sensation of shuddering, a desire of locomotion, followed by prostration, and sometimes syncope. Bohling, in 1840, observed similar effects from the oil which he obtained from the fresh herb, just after flowering, to the extent of 0.3 per cent.

It remains to be proved whether an alkaloid is present in hemp, as suggested by Preobraschensky.

"The other constituents of hemp are those commonly occurring in other plants. The leaves yield nearly 20 per cent. of ash.

"As to the resin of Indian hemp, Bolas and Francis, in treating with nitric acid, converted it into Oxycannabin,  $C_{20}H_{30}N_2O_7$ . This interesting substance may, they say, be obtained in large prisms from a solution in methylic alcohol. It melts at  $176^{\circ}C.$ , and then evaporates without decomposition; it is neutral. One of us (F.) has endeavoured to obtain it from purified resin of charas, but without success" (Fluck. and Hanb., Pharmacog., page 549).

Dr. Dymock (in his 2nd Ed. of the *Materia Medica of Western India*) goes into considerable detail on the chemistry of this drug. Preobraschensky discovered in China haschisch, a volatile alkaloid, which he believed to be identical with nicotine. Dragendroff and Marquiss suggested that this may have been derived from tobacco mixed with the beverage. Siebold and Bradbury, while concurring with this explanation, announce their discovery of an alkaloid perfectly distinct from nicotine; they give it the name of Cannabine. Dr. Hay, some time before, published his conviction that hemp contained several alkaloids, the principal one being a substance he named Tetanocannabin. More recently to all these published results of the chemical investigation of the narcotic resin of *Cannabis sativa*, Drs. Warden and Waddel, of Calcutta, have failed to discover the principle alluded to by Dr. Hay. But they obtained, by the destructive distillation of the alcoholic extract, an amber coloured oil. "This oil had a mildly empyreumatic odour, which was distinctly tobacco-like. Its taste was warm, aromatic, and somewhat terebinthinate. The oil contained phenol, ammonia, and several other of the usual products of destructive distillation.

"The nicotine-like principle contained in this oil appeared to be an alkaloid. It formed salts, which evolved a strong nicotine-like odour when acted on by alkalies. But physiologically it was found to be inert, and therefore was evidently not identical with nicotine." (Ind. Med. Gaz., Dec. 1884.)

#### FOOD.

Food. 379.

*Food.*—Messrs. Duthie and Fuller, writing about the Himalayan tracts within the North-Western Provinces, say that the seed is not uncommonly roasted and eaten by the hill men, and that after the oil is expressed, the oil-cake is given to their cattle. Dr. Stewart writes, that on the Sutlej the seeds are roasted and eaten in small quantities with wheat.

#### DOMESTIC AND INDUSTRIAL USES.

Domestic. 380.

*Cannabic Composition.*—"This material for architectural decoration is described by Mr. B. Albans to have a basis of hemp amalgamated with resinous substances, carefully prepared and worked into sheets of large dimensions. Ornaments in high relief, and with great sharpness of detail, are obtained by pressure of metal discs, and they are of less than half the weight of papier maché ornaments, sufficiently thin and elastic to be adapted to wall surfaces, bearing blows of the hammer and resisting all ordinary actions of heat and cold without change of form. Its weather qualities have been severely tried in Europe, as for coverings of roofs, &c., remaining exposed without injury.

This composition is of Italian origin, and in Italy it has been employed for panels, frames, and centres. It is well fitted to receive bronze, paint, or varnish; the material is so hard as to allow gold to be burnished after gilding the ornaments made of it" (Ure., I., 611).