Charas of Indian Hemp

by David Hooper, F.C.S., F.L.S.

Although "charas" has been properly described as "a foul and crude drug, the use of which is properly excluded from civilised medicine," it is imported into British India to the value of £120,000 per annum, a total exceeding the combined value of all the other medicinal imports, so that it is an article which deserves more than passing notice. Indian hemp (Cannabis Sativa), when grown in the East, secretes an intoxicating resinous matter on the upper leaves and flowering spikes, the exudation being marked in plants growing throughout the Western Himalayas and Turkestan, where charas is prepared as a commercial article. Formerly it was cultivated in fields in Turkestan, but now it is grown as a border around other crops (such as maize), the seeds of both being sown at the same time. A sticky exudation (white when damp and greyish when dry) is found on the upper parts of the plant before the flowers show, and in April and May, when the plants attain a height of 4 or 5 ft. and the seeds ripen, the Cannabis is gathered, after reaping the crops, and stored in a cool, dry place. When dry the powdery resinous substance can be detached by even slight shaking, the dust being collected on a cloth. In some districts the plants are cut close to the roots, suspended head downwards, and the dust or *gard* shaken from them and collected on sheets placed on the floor. The leaves, seeds, etc., are picked out, and sand, etc., separated by passing through a fine sieve, the powder being collected and stored in cloth or skin bags, when it is ready for export. In some villages the charas or extract is made up into small balls, which are collected by the middleman.

On reaching British territory all charas is weighed before the nearest magistrate, by whom it is sealed, a certificate of weight signed by the Deputy Commissioner being given to the owner. The trader, before leaving the district, obtains a permit allowing him to take the drug to a special market. The zamindars of Chinese Turkestan are the vendors of the drug, the importers being Yarkhandis or Ladakhis, who dispose of it at Hoshiapur and Amritsar principally, returning with piece-goods, or Amritsar merchants who trade with Ladakh. The drug in this way reaches the chief cities of Punjab during September and October. Thence it is distributed over the Central and United Provinces as far as Bombay and Calcutta, and is used everywhere for smoking. Charas, though a drug, plays the part of money to a great extent in the trade that is carried on at Ladakh, the price of the drug depending on the state of the market, and any fluctuations causing a corresponding increase or decrease in the value of the goods for which it is bartered. The exchange price of charas thus gives rise to much gambling. A pony-load (two pais or three maunds) sells for Rs. 40 or Rs. 50, the cost of transport to Hoshiapur (the chief Punjab depot) is Rs. 100, and there it fetches from Rs. 30 to Rs. 100 per maund. Retail dealers sell small quantities at a price that works out at Rs. 200 to Rs. 500 per maund. Five years ago the Kashgar growers, encouraged by the high prices, sowed a large crop and reaped a bumper harvest, only to find the market already overstocked and prices on the Leh Exchange fallen from Rs. 60 to RS. 30 per maund. The following are the imports of charas from Ladakh and Kashmir between 1904 and 1907:

	1904-5	**1905-6**	**1906-7**
Cwt.	2818	2446	2883
Value	Rs. 12,13,860	Rs. 18,39,960	Rs. 22,90,560

Small quantities of charas are made, chiefly for local consumption, in the Himalayan districts of Nepal, Kumaon, and Garhwal, and in Baluchistan. Samples of Baluchistan charas made in the Sarawan division of the Kalat State have been sent to the Indian Museum by Mr. Hughes-Buller.

The following is the mode of preparation.

"The female 'bhang' plants are reaped when they are waist high and charged with seed. The leaves and seeds are separated and half dried. They are then spread on a carpet made of goat's hair, another carpet is spread over them and slightly rubbed. The dust containing the narcotic principle falls off, and the leaves, etc., are removed to another carpet and again rubbed. The first dust is the best quality, and is known as *nup;* the dust from the second shaking is called *tahgalim*, and is of inferior quality. A third shaking gives *gania*, of still lower quality. Each kind of dust is made unto small balls called *gabza*, and kept in cloth bags. The first quality is recognised by the ease with which it melts."

The local rates per tola are: for first quality 2a.5p., second quality 1a.7p., and third quality 11p. Small quantities of charas find their way from Thibet into British and Native Garhwal, and a little is prepared in

Simla and Kashmir; while other sources are Nepal and the hill districts of Almora and Garhwal. In preparing Nepal charas, the ganja-plant is squeezed between the palms of the hands, and the sticky resinous substance scraped off. *Momea*, black wax-like cakes, valued at Rs. 10 per seer, and *Shahjehani*, sticks containing portions of leaf, valued at Rs. 3 per seer, are the two kinds of Nepal charas, a few maunds being exported annually to Lucknow and Cawnpore. No charas is made in the plains of India, except a small quantity in Gwalior, the Bengal ganja yielding no charas in all the handling it undergoes in the process of perparation --- thus emphasising the fact that the intoxicating secretion is developed in plants growing where the altitude and climate are suitable, as in the Himalayas and Turkestan.

Adulterations. --- Aitchison in 1874 stated that no charas of really good quality ever came to Leh, the best charas in the original balls being sent to Bokhara and Kokan. He said the chief adulterant is the mealy covering of the fruits of the wild and cultivated Trebizond date (*Eloeagnus hortensis*). The impression in the United Provinces and the Punjab is that the Yarkhand drug is sophisticated, and a preference is given in some quarters to the Nepal and other Himalayan forms, which command a higher price. The Special Assistant in Kashgar declares there is no advantage in increasing the weight, as when dealers in India buy the drug they test it, otherwise they would pay a heavy duty on the adulterant as well as on the charas itself; so no exporter at present would spoil his charas by adding extraneous substances.

Mr. Hooper added descriptions of samples, namely: Kashgar charas, Yarkhand charas, Baluchistan charas, Gwalior charas, Kumaon charas, Garhwal charas, Nepal charas and Momea charas, from Simla.

Chemical Examination. --- The table of analyses appended is taken from the author's report to the Indian Hemp Drug Commission of 1893-4, but a few recent analyses have been added:

Description of Charas	Extract, Alcoholic	Vegetable Matter	Ash, Soluble	Sand	Volatile Matter
Yarkhand	40.0	18.2	23.9	11.4	6.5
Amballa "Mashak"	42.7	12.9	12.4	28.2	5.8
Amritsar "Bhara"	38.1	14.9	10.8	29.8	6.4
Amritsar "Mashak"	46.5	12.6	10.0	27.3	3.6
Delhi Dust, 12a.	42.4	17.9	9.8	25.9	4.0
Delhi Dust, 1r. 1a.	42.6	18.8	11.1	23.2	4.3
Delhi Dust "Mashak" 1r. 9a.	41.1	11.3	10.7	29.5	7.4
Bombay	36.1	20.2	11.8	27.3	4.6
Gwalior	43.3	27.7	8.2	17.7	3.1
Kumaon (wild)	22.4	52.0	9.2	7.4	9.1
Kumaon (cult.)	34.2	46.3	9.0	3.0	7.5
Garhwal	41.9	37.0	7.9	5.5	7.7
Almora	36.9	40.5	10.5	4.6	7.5
Nepal	44.6	35.1	8.2	6.5	5.6
Nepal "Shahjehani"	44.4	37.7	9.6	4.1	4.2
Simla "Momea"	37.0	32.0	12.3	9.3	9.4
Baluchistan (1) 1903	22.4	19.9	14.8	38.6	4.3
Baluchistan (2) 1903	22.0	35.2	20.8	15.1	6.9
Baluchistan (3) 1905	24.2	16.0	13.3	39.3	7.2
Baluchistan (4) 1905	26.0	24.1	9.6	31.0	9.3
Baluchistan (5) 1905	24.9	27.3	11.5	25.8	10.5
Kashgar (1)	40.2	21.1	9.2	16.8	12.7
Kashgar (2)	40.9	16.3	9.9	20.5	12.4

Kashgar (3)	48.1	15.6	8.2	16.1	12.0

According to Fluckiger and Hanbury, charas yields one-fourth to one-third of its weight of amorphous resin, and it has been stated that good samples yield 78 per cent. of resin. It will be seen above that the average yield in the North Indian samples is 40 per cent., the highest being from Kashgar and the lowest from Baluchistan and from Kumaon wild plants, the last-named corresponding to a good sample of ganja.

Physiological Values. --- Captain J. F. Evans. I.M.S., Chemical Examiner to the Government of Bengal, also gave results of his physiological tests in the Indian Hemp Drug Commission's Proceedings for 1893-4. His experiments were made with alcoholic extracts, and only one sample --- Amritsar best charas --- approached in definite physiological effects the extract, taken as a standard, prepared from Bengal ganja. The following are the values compared with that of Amritsar mashak, designated as 32:

Amritsar Mashak	32
Delhi Mashak	24
Amballa Mashak	23
Garhwal	21
Delhi dust (2nd)	20
Amritsar Bhara	19
Bombay	4
Amballa Mashak	2
Delhi dust	2
Kumaon wild	1
Kumaon cultivated	1
Gwalior	1

so that the best Amritsar charas is thirty-two times as potent as the Gwalior product, the latter from plants grown in the plains, while the amount of alcoholic extract bears no relation to the physiological activity of the drug.

Professor Greenish in his well-known work on *Materia Medica* says the Cannabis Indica is an annual dioecious herb indigenous to Central and Western Asia, but largely cultivated in temperate countries for its strong fibres (hemp) and its oily seed (hemp-seed) and in tropical countries also for the resinous secretions which it there produces. The secretion possesses very valuable and powerful medicinal properties; but it is not produced in the plant when grown in temperate climates; on the other hand the fibre of the plant under the latter condition is much stronger than that of the tropical plant.

The hemp plant grown in India differs, however, in certain particulars from that grown in Europe; and the plant was formerly considered a distinct species and named Cannabis Indica, but this opinion is now abandoned.

The cultivation of hemp for its seed and fibre dates from very remote periods. It was used as an intoxicant by the Persians and Arabians in the eleventh and twelfth centuries and probably much earlier, but was not introduced into European medicine until the year 1838. For medicinal use it is grown in the districts of Bogra and Rajshaki to the North of Calcutta and westward, thence through central India to Gujerat. Very good qualities of the drug are purchased in Madras, but the European market is chiefly supplied with inferior grades from Ghalapur.

The pistillate plants by which alone the resin is secreted in any quantity are pruned to produce flowering branches, the tops of these flowering branches are collected, allowed to wilt, and then pressed by treading them under the feet into more or less compact masses. This forms the drug known as "ganjah," or (on the London market) Guaza.

The larger leaves are collected separately; when dried they are known as "bhang."

During the manipulations to which the plant is subjected in preparing the drug, a certain quantity of the resin is separated; it is collected and forms the drug known as "charas" (Churrus). Charas is also prepared by

rubbing ganjah between the hands or by men in leather garments brushing against the growing plants, in any case separating part of the active adhesive resin; hence the official description limits the drug to that from which the resin has not been removed.

All these forms of the drug are largely used in India for producing an agreeable form of intoxication; ganjah and charas are smoked, while bhang is used to prepare a drink or sweetmeat.

The drug has a powerful odour, but is almost devoid of taste.

Numerous attempts have been made to isolate the active constituent of Indian hemp; it is not possible here to do more than allude to the chief late ones.

In 1881 Siebold and Bradbury isolated a thick yellowish oily liquid which they termed *Cannabinine* and their results were confirmed in 1884 by Warden and Waddell.

In 1894 Robert separated a dark red syrupy mass possessing intoxicating properties and in 1896 Wood, Spivey, and Easterfield obtained from charas under reduced pressure certain inactive terpenes and a viscous resin *Cannabinol* which when warmed melts to an oily liquid. Cannabinol when taken internally induces delirium and sleep, and, as far as at present known, is the intoxicating constituent of Indian hemp.

In addition to this principle Matthew Hay in 1883 obtained colourless crystals of an alkaloid *tetano-cannabine* which in physiological action resembled strychnine.

Cannabis Indica was formerly used as a hypnotic and anodyne but is uncertain in its action.

It is administered in mania and hysteria as an anodyne and antispasmodic.

Mr. E. M. Holmes, F.L.S., Curator of the Pharmaceutical Society's Museum, writing on the subject of Cannabis Indica says "The Dervishes make a preparation by macerating the resinous type in almond oil and give a small quantity of it in soup to produced prolonged sleep."

A strong dose of Cannabis produces curious hallucinations abolishing temporarily the ideas of time and distance; but the ordinary drug as imported is never the current crop, which the Hindoos keep for their own use. The active principle Cannabinol (as far as is known) rapidly oxidises and loses its properties so that if a really active preparation is required, it is best to get it made in India, using absolute alcohol and the fresh tops, or recently made charas, which, being a solid mass, does not readily oxidise.

Before closing it might be well to notice in detail the final investigations made by Messrs. Wood, Spivey, and Easterfield.