

DAGGA: A REVIEW OF FACT AND FANCY*

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'Dagga' is our word for marihuana, hashish, bhang, or *Cannabis sativa* L. But dagga is also the name applied to 14 species of the plant *leonotis*, indigenous and common in South Africa.¹ The word has come into our English language via Afrikaans which derived it from pure Hottentot 'daga'. It is only assumed that the idea in the Hottentot mind which attached the word to the plant *cannabis* had to do with its remarkable qualities.

The fact that the name dagga refers to both *cannabis* and *leonotis*, 2 plants growing wild and readily in South Africa, has in the past given rise to much confusion among those who have interested themselves in the 'dagga problem'. This confusion appears to be based on, or originate primarily from, the superficial similarity of appearance of the two species of plant, and different people hold different opinions about which species is the 'true' dagga. The confusion is confounded still more by the properties which some writers have attributed to *leonotis*, comparable with those of *cannabis*, but which have been denied by others.¹ An editorial in the *Journal*² during the editorship of Leipoldt, always an interesting controversialist, held that *leonotis* was the 'original dagga' but conceded that usage appeared to have firmly attached the name to *cannabis*, and for this reason we have been obliged to accept the word dagga in this relationship.

Watt and Breyer-Brandwijk,¹ the eminent botanists, regard *cannabis* as the 'true' dagga. These 2 authors, as a result of their investigation into the properties of the 2 plants, concluded that the smoking of *leonotis* 'produced no symptoms apart from unpleasantness'.^{1,3} But contrarily, *Die Afrikaanse Woordeboek*⁴ states unequivocally on its own authority 'die rook van die blare en jong stingels dieselfde bedwelmende uitwerking het as by bogenoemde soorte (*Cannabis*)' but which can be differentiated from the latter by such names as kaffer-, klip-, knop-, koppies-, malkop-, perde-, rooi(pootjie)-, strand- and velddagga.

Here we have 2 apparently 'authoritative' but contradictory statements about the potential intoxicant properties of *leonotis*, and Watt and Breyer-Brandwijk have studied one variety of this series as far as the botanic minutiae are concerned but not with regard to the chemical properties. The practical evidence, however, indicates that *leonotis* is not the species of plant which is smoked in South Africa for enjoyment, because all of 93 specimens produced in court in police prosecutions were without exception *cannabis*—indirect but acceptable evidence that it is dagga *cannabis* and not dagga *leonotis* which is smoked for the hedonistic pleasure it provides the smoker.

The fact that *cannabis* is prohibited by law in this country while *leonotis* may be freely grown, and that all convictions have been for the possession of *cannabis*, speaks volumes against *leonotis* having any of the virtues or vices of *cannabis*.

If we go back to the Hottentots' practice of using dagga we can take it that the first description written in Southern Africa on the effects of *cannabis* was that by Governor

Jan van Riebeeck in his diary. He observed: 'De Haucumguas, welcke. . . mede lantbouwen, daar se daccha in teelen, sijnde een droogh cruijt dat de Hottentoots eeten ende droncken van worden.' It is of some interest to note that Van Riebeeck used the word *eeten* and not *rooken*.⁵

HISTORICAL RETROSPECTION

Van Riebeeck's diary informs us that the consumption of dagga was a well-established 'way of life' among the primitive Hottentots of the Cape before his arrival, and this fact raises interesting speculation about the origin of the habit among so aboriginal an ethnic group (Bushmen were also partakers of the weed) here at the southernmost tip of Africa, a custom that can be traced back to ancient times in the Middle East.

The plant has considerable agricultural and commercial importance, derived from the manufacture of fibre and oil for soap and oil-cake (which facts in themselves determine that the common hemp will always be with us). The surmised route for the propagation of the plant is, or was, along the ancient ocean highway from the eastern Mediterranean along the Red Sea and southern coasts of Asia to the shores of Hindustan—one of the oldest routes along which migration of races took place in olden times.⁵

The presumption that the Hindi word *bhāṅg* (*cannabis*) is the root of the Shangaan word *mbangi*, meaning dagga, has been justified. The implication extracted from this obvious identity of the 2 names for dagga, in 2 languages which have absolutely no etymological point of contact, is that the plant was first carried to the coast of Mozambique, which is the region of East Africa where Shangaan is spoken, by the Portuguese militant traders returning from India (*Cannabis sativa* L. *Indica*). There it was planted and thence spread by name and proliferation inland and southwards to reach the Venda people in the Soutpansberg of the Southern Transvaal, into whose language it insinuated itself as *mbanzhe* (in which the Hindu origin can still be detected).⁶ But the transit from the Venda to the Zulus of Natal substituted the name *intsangu*, and this in turn was replaced by dagga when it reached the Hottentots.

Other early observers along with Van Riebeeck have recorded the smoking of dagga by all the races of Southern Africa, Hottentot, Bushmen and Bantu. These indigenous inhabitants still adhere to the tradition that their ancestors have used dagga since time began, and so it is not possible to know how or when the custom of its social usage was introduced into any particular tribe.

This social usage among the Bantu is deserving of some additional comment if only to indicate the tribal and patriarchal approval of the practice among a people, like the Zulu, who are essentially a warrior-race. Very few Bantu women—with occasional exceptions among the elderly—smoked dagga and this temperance has been attributed to, but not adequately explained by, 2 tribal conditions: firstly, the payment of cattle by the husband as lobola for their wives, who were expected to render full service in return, did not encourage such a 'luilekkerland'

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habit among the womenfolk; and, secondly, the fact that as the women had to do the routine work of the tribe there was no time for this kind of idleness.⁶

In times past the bad effects of excessive dagga smoking, as with all excesses, were recognized for what they were, and immoderate use of the weed was despised by the elders of the tribe. Accustomed smokers used dagga in moderation and in somewhat formal fashion; intemperance was frowned upon then, and probably, among the rural Bantu, it is even now.⁶

THE DAGGA DOCTRINES

Presently when dagga is being subjected to legislative, sociological, pharmacological, ethological, deontological and even philosophical inquisition in different parts of the world where 'permissiveness' is accepted as a new way of life, where established taboos have been displayed as unacceptable superstitions by youth crusading against ancestral authority, it is opportune to notice how the Bantu, who have indulged themselves for centuries in the drug, are convinced about the effect experienced with its use. Their views agree in great measure with those of reputable investigators in the western world who have been commissioned to evaluate the influence of its use upon society.

The Bantu believed and have observed that dagga affects different individuals differently. The effect is closely tied to the inborn temperament of the smoker (or eater) of dagga. They do not, despite the law's opposition, regard the habit as reprehensible unless it be taken to excess. The Zulu and Xhosa-speaking Bantu have not accepted the official White man's thinking; they deny that anything harmful arises from the moderate use of dagga. Bryant⁷ has recorded in his account of the Zulu people that 'young warriors were specially addicted and under the exciting stimulation of the drug were capable of accomplishing hazardous feats'. Here was reason enough for the young bloods of the tribe! The Bantu, on the other hand, do not regard the plant as having any aphrodisiac qualities; parents whose young nubial sons have shown little or no interest in taking a wife have blamed the disinclination on dagga.

Wolff,⁸ in South America, where the taking of cannabis (marihuana) is regarded by the governing authorities as a national evil, tried out the effects of the drug on 50 non-selected individuals who were asked to smoke it in a convivial environment without let or hindrance of any kind, and he was able to separate 14 different kinds of reactions. He was not able to predict the type of reaction which would follow the smoking of marihuana but he was satisfied that the reaction to the drug was capable of revealing the true or real nature of the smoker's character and personality.

In his group of 50 non-selected cases, only 7 did not show aggressiveness. Wolff, contrary to the viewpoint of the Bantu mentioned above, asserts that marihuana does stimulate sexual propensity and can 'produce the psychic state of a Don Juan'. And he had enough 'observed material to demonstrate that marihuana can also create criminal attitudes and acts'. He is also of opinion that addiction leads to general mental deterioration.

The leaders among the Coloured people of South Africa

lean strongly towards Wolff's conclusion arrived at in South America, and disagree with the opinion of the Bantu in their own country. They recognize the dagga habit as the companion of poverty, the cause of backwardness and the accomplice of crime; all these leading to unemployment and disregard of personal respectability. They see dagga as a symptom as well as a cause of these conditions. But even here, among this population group with a long experience of the use of dagga, there is a considerable school of thought which does not believe the substance to be harmful . . . in moderation. But they will concede that dagga and alcoholic drinks (which are usually potent) can produce a much more dangerous and intense intoxication than either alone, and that the effects of the combination are always harmful.

The Commissioner of Police, mentioned in a report of the authoritative Interdepartmental Committee on the Abuse of Dagga,⁹ recommended the provision of severe penalties for any form of traffic in the drug and that an institution be established for the treatment of addicts. He believed the consumption of dagga to be an important contributing factor in the incidence of crime. Twenty-one years ago the number of convictions for being in the possession of dagga was 14 016, of which 185 were Whites, 2 950 Coloured, 205 Asiatic and 10 676 Bantu. These were convictions all over South Africa in one year.⁶ The charges were for one crime, that of being in possession of dagga in whatever form, not having committed crimes while under the influence of dagga. A sameness with a difference.

More than 30 years ago Bromberg⁹ studied the effects of cannabis upon a number of individuals, and although he talked of toxic marihuana psychoses and described the manifestations of this state in some detail, he nevertheless concluded that 'countless persons use marihuana without the development of an observable mental condition. In the acute intoxication no permanent effect is observable by psychiatric examination after the effects wear off in 1-3 days.' He found in general that early use of the drug apparently did not predispose to crime. 'No positive relation could be found between violent crime and the use of marihuana in cases observed in the psychiatric clinic. No cases of murder or of sexual crimes due to marihuana were established.' Bromberg also reported that the lack of increased tolerance and the absence of demonstrable symptoms argue against the theory that marihuana is habit-forming and that the use of marihuana is a 'sensual addiction in the service of the hedonistic elements of the personality'.

Bromberg does not appear to have changed his viewpoint since his first publication, for Wolff⁸ flatly contradicts his conclusions as being derived from 'material scarcely adequate for such deductions'. The 'material' consisted of observations made in courts-of-law, clinics and prisons, and 'it is the nature of criminal tendencies not to manifest themselves in the hospital, nor in the outpatient department nor at the judicial cross-examination'. Nor did Wolff consider the 'experimental conditions' to be right for prisoners to be given marihuana to smoke in surroundings of rigid discipline instead of 'the bad but free environment to which they are accustomed'. Wolff added a criticism of Bromberg's article by stating that

it appeared that Bromberg in an effort to combat widely-held and perhaps alarmist views of the dangers of marihuana had 'leaned too far back and minimized the long-term noxious effects'. The same criticism that was levelled by Wolff against Bromberg's investigation might be directed against a report of an investigation into the mental symptoms associated with the smoking of dagga conducted by the Commissioner for Mental Hygiene in South Africa and published in 1938.¹⁰ For all the participants in the trial were inmates of a mental hospital who were suffering from 9 varieties of mental illness, ranging from pure dagga psychosis to manic depressive psychosis. Any conclusions that may have been arrived at from this attempt must be considered invalid, and this despite the terms of reference reading 'to arrange for a controlled investigation into the possible relationship of dagga-smoking with acute psychotic conditions and with the ultimate production of a state of mental degeneration in addicts'.

A scanning of the world press^{11,12} of the past 40 years reveals a remarkable constancy of lights and shadows which blur the truth about the use of cannabis. In South Africa around 1934 the daily press was critical of official opinion and made a case for the harmlessness of dagga smoking, pointing out its use among the Bantu where it showed no evidence of being habit-forming. The press² appeared to disapprove of the fact that during the year ending in 1934, out of 5 885 convictions under the terms of the 5th Schedule of the Medical, Dental and Pharmacy Act,¹³ 5 878 were for the possession of dagga, the remaining 7 being for opium.

Yet, across the ocean in North America the *Canadian Medical Association Journal*¹⁴ thought fit to devote an editorial that same year to the availability and effects of cannabis upon the youth of Canada, the drug having been smuggled in from the USA. It mentions that as long ago as 1931 cannabis cigarettes were being passed to boys and girls. It referred to 'the experience in all countries that hashish has a special appeal for the young, not that they crave the drug, at least at first, but they use it to appear "smart". They have not at any time been addicts of morphine, etc.' Another point made was that the drug has a peculiar fascination for certain types of character, and because there is no depression or nausea following its use, this becomes an added attraction. *The Lancet*¹⁵ noticed this editorial and quoted that marihuana cigarettes were on sale in cabarets and night-clubs, were even hawked about to young boys and girls, and were peddled in dance-halls; and that the traffic in Indian hemp had attained the proportions of an industry with widespread ramifications. Opinion was also expressed that it was the heavy restrictions on the 'hard' drugs (heroin, cocaine) that induced the smoking of cannabis.

The *New York Times*¹¹ published an article on the 'Increasing menace of marijuana' in the same year. According to the report there was little or no control exercised over the buying and selling of cannabis in the United States. There is no control today. So it cannot be justifiably said that circumstances pertaining to the traffic in dagga are any different, i.e. any better, or any worse; they are surely very much *in statu quo*.

The question arises: does enforcement or, rather, attempted enforcement of the law help? This leads us to

The Times of London, which on 24 July 1967 published a very provocative statement signed by a set of scientists, doctors and intellectuals who urged that 'the law against marihuana is immoral in principle and unworkable in practice', and this was only one of many demands for more 'permissive' tolerance of the drug.¹² This modern attitude by quite influential people could have been a distorted echo of a leader in *The Lancet*¹⁵ in 1963 which suggested that the argument for legalizing the import and consumption of cannabis (in England) was worth considering. *The Lancet* had occasion later to regret using the words 'worth considering', for all who read them took them to mean that *The Lancet* supported the legalization of the drug in England.

The British Home Office,¹⁶ in 1967, made it known that some 97% of all heroin addicts known to the Home Office had a previous history of taking cannabis. In the British Houses of Parliament that same year the Under-Secretary for the Home Office¹⁷ deprecated any suggestions that cannabis was not a serious question. He said that there was more traffic in, and consumption of, cannabis than any other drug under international control. Perhaps there is some significance in the fact that 2 countries with a vast experience of the smoking of cannabis, Egypt and South Africa, should separately and in different years have made special representations to the League of Nations on the subject of cannabis. In 1923 it was the express wish of South Africa that dagga be included in the list of narcotic drugs which, previously, had included almost only opium and its derivatives.⁶ Two years later the Egyptian delegate to the second conference on opium of the League stated that 30-60% of those patients suffering from insanity in Egypt were cases of 'chronic hashishism'.¹⁸

Bourhill,¹⁹ in 1913, submitted his thesis to the University of Edinburgh on the evils resulting from the smoking of dagga among the native races of South Africa, and among the evils he included admissions of dagga lunacy to the mental hospitals. These lunatics were often dangerous to person and property. The recovery rate was high but the frequency of relapses supported suspicion that the continued habit was liable to produce a chronic psychosis. Blair,²⁰ writing on this aspect of dagga addiction, stated simply, 'the cannabis smoker nearly always becomes an imbecile in time'.

A leading article in *The Lancet*²¹ of January 1969 appeared to sympathize with a proposal to lessen the penalties currently imposed upon anyone connected with the illegal use of cannabis. The sympathy was activated by the summing up of a report on cannabis by the Advisory Committee on Drug Dependence,²² in England, which read, 'Notwithstanding the limits of present knowledge, it is clear that cannabis is a potent drug having as wide a capacity as alcohol to alter mood, judgement and functional ability. In that sense, we agree . . . that cannabis is a "dangerous drug." But we think it is also clear that, in terms of physical harmfulness, cannabis is very much less dangerous than the opiates, amphetamines, and barbiturates, and also less dangerous than alcohol.' *The British Medical Journal*,²³ in an editorial entitled 'Potted dreams', came out strongly against this proposed lessening of penalties for a drug that 'causes mental disorientation'. *The Lancet* could not uncover any reports of persistent

psychotic states following cannabis, and although acute psychoses are recognizable and usually pass away uneventfully, the existence of a persistent 'cannabis psychosis' was regarded as doubtful.²¹ Is it possible to reconcile some or all of these conflicting points of view?

THE INFLUENCE

The 'official' influence last appeared in the *British Pharmaceutical Codex* of 1949,²⁴ for the monographs on cannabis have been omitted from the later editions. After a discussion of the nature of the constituents of the herb it elaborated thus: 'Cannabis depresses first the higher critical faculties and later perceptive sensory and motor areas of the cerebrum. In some persons, particularly orientals, it produces a type of inebriation with a feeling of pleasurable excitement and some mental confusion, fantastic or erotic hallucinations and a loss of the ability to estimate time and space; later decreased sensitiveness to touch and pain, as well as muscular lethargy and relaxation precede the onset of a comatose sleep in which respiration is slowed and the pupils are dilated. In other persons it may cause only lethargy with some irritability of temper. Cannabis is a habit-forming drug and habitués often become insane; amongst orientals it is taken as a drink or conserve or smoked in pipes or cigarettes under the names of chavas, ganjah, guaza, bhang, and hashish; in South Africa it is smoked under the name of dagga and in Mexico and Brazil it is the active ingredient of marihuana cigarettes. Cannabis is too unreliable in action to be of value in therapeutics as a cerebral sedative or narcotic and its former use in mania and nervous disorders has been abandoned.'

Nearly all the published work dealing with the intoxicant effect of cannabis upon people treats the subject on a generalized basis, and on these generalizations formulated from studies conducted on groups of people grossly different in culture, character and temperament, ethnic origins and physical and intellectual development, are erected moral injunctions and legal prohibitions. There are very few recorded first-hand clinical observations and assessments in our medical literature presented as case histories and none in South African medical literature, which is surprising for a country with such a long experience with the drug. It may be partly explained, perhaps, by the legal restrictions upon its enjoyment.

Dr Elizabeth Tylden,²⁵ however, had reason to write of her experience over many years of use of the drug, both at her childhood home in the Orange Free State and presently in England. She describes some of the smokers of hemp on her farm in the Orange Free State as being what today would be called, in the vernacular, 'potheads' and being 'stoned out of their minds'. This was the result of constant dagga smoking and, in our vernacular of long standing, a 'ware daggakop'. She has detailed histories of 40 addicts and is able to document the deleterious influence upon character with a change in personality. Her addicts, whom she called her chronic patients, looked ill and were emaciated despite enormous appetite and thirst. A significant observation which she makes from her sad experiences with consumers of the drug is that she dreaded 'a crop of cannabis psychosis to supplement the diminishing mental hospital population'.

Thirty-five years ago Fleming²⁶ had clinical experience of a 'new' case of acute dagga psychosis which was presented by Baker-Bates,²⁷ with detailed clinical appraisal of the condition as it manifested itself in a healthy young woman with an English cultural background. It arose in a curiously interesting fashion. A young man who had grown his own cannabis plant at home (having obtained the seed from a quantity of parrot food) made a cigarette from the flowering plant which he smoked out of pure curiosity originating from his reading on the subject. His delightful loss of sense for actual time and space dimensions, his vivid dreams or hallucinations and subsequent drowsiness proved of such interest to his fiancée that her curiosity was aroused, for she was incredulous of her fiancé's experience. She tried two-thirds of a cigarette made from the top of a fruity plant.

Soon afterwards she fell asleep and a few minutes later, when disturbed, awoke with a start and showed apprehension. Her eyes were bright, her hands were twitching, and she appeared intoxicated. She asked where she was, probably being deceived by hallucinations, but seemed happy. Fifteen minutes later she was taken for a short walk which was interrupted by outbursts of laughter and of affection. Her speech became slurred from dryness of the mouth and her gait increasingly unsteady. Twenty minutes later she was taken to a doctor who recorded that she was pale, but able to stand and walk, although feeling dizzy. She was very excited and talkative and made stiff purposeless movements with her hands. She was highly emotional towards her companion; at one moment gay, she was next anxious and said she felt 'enclosed'. She exaggerated the passage of time and was confused about spatial dimensions. Her tongue and mouth felt parched and words were pronounced with difficulty while sentences lapsed into incoherencies. Her eyelids were half-closed, while the pupils dilated but reacted to light. The pulse was rapid but strong. At 11 p.m. (50 minutes after smoking the cigarette) she was in a collapsed condition. Her symptoms were then loss of power in her legs and inability to stand. Dizziness, dryness of the mouth and palpitation and lengthened estimations of the passage of time continued. She believed her condition had lasted for many hours and although she was fully conscious of her existence she imagined she was 'outside her own body', a hallucination of dual personality, enclosed in a small space and surrounded by a mist from which she could not escape. This imaginary mist did not impair her vision for distant objects. Examination also showed her speech to be confused, rambling, and often inarticulate. She was unable to stand steadily without support and showed great inco-ordination of movements of the hands. There was tachycardia (140/min) and also marked inspiratory dyspnoea. No other abnormality was found. She was treated in a general manner for 'shock' and she recovered after 9 hours, when there was no sequela other than a severe headache.

This is the practically verbatim case report published in *The Lancet*. Its meticulous detail in a case of cannabis acute intoxication has not been matched in any publication in our medical literature. And this was the outcome of smoking two-thirds of a dagga cigarette made from the fruit of a cultivated plant, a true *Cannabis sativa* L.!

CANNABIS AND ALCOHOL

These two drugs are often compared but the resemblance under close observation of the 2 forms of intoxication is only superficial. A brief description of the effects of imbibed alcohol on the human being, written 150 years ago,²⁸ cannot be improved upon. The pleasure given by alcohol is always rapidly mounting, and tending to a crisis, after which it as rapidly declines. In comparison the effect of cannabis (when of good quality), once effective, remains

stationary for 8-10 hours. The first is a case of acute, the second of 'chronic', pleasure; the one is a flickering flame, the other a steady and equable glow. Wine disorders the mental faculties. Cannabis enables one to say sharp and witty things. Pleasant ideas flit through the mind with a wonderful rapidity, so that time seems much extended. Alcohol robs a man of his self-possession. Cannabis taken moderately reinforces physical strength. Alcohol 'unsettles the judgement, and gives a preternatural brightness and a vivid exaltation to the contempts and the admirations, to the loves and the hatreds, of the drinker'. Cannabis produces a pleasurable sensation of mild intoxication and the smoker or eater is particularly gay, joyous and pleased with everything. He will laugh and smile on the slightest provocation. Both give 'an expansion to the heart and the benevolent affections'; but cannabis does not, as with alcohol, give rise to 'the sudden development of kind-heartedness, always more or less of a maudlin and a transitory character, which exposes it to the contempt of the bystander. Men shake hands, shed tears, and swear eternal friendship—no mortal knows why; and the animal nature is clearly uppermost. True it is that even wine up to certain point, and with certain men, rather tends to exalt and to steady the intellect . . . it may advantageously affect the faculties, brighten and intensify the consciousness and give to the mind a feeling of *ponderibus librata suis*.'

However, there is this likeness that alcohol and cannabis can both show a man's true character. Alcohol, however, will 'constantly lead a man to the brink of absurdity and extravagance; and beyond a certain point, it is sure to volatilize and to disperse the intellectual energies. A man who is inebriated, or tending to inebriation, is, and feels that he is, in a condition which calls up into supremacy the merely human, too often the brutal, part of his nature.'

There is this other very marked difference: Alcohol is notorious for that extremely unpleasant state of mental and physical distress which in the vernacular goes by the name 'hangover', which can vary considerably in its unhappy manifestations according to the types of alcohol imbibed and other associated means of raising the spirits. Cannabis, on the contrary, will permit the user to awaken refreshed even though his surroundings may feel unreal for an hour or so. There is usually no headache. An excellent appetite is a common sequel.

DISCUSSION

Although in South Africa very little has been published in the medical journals about the clinical aspects associated with indulgence in dagga, its age-old and widespread use in certain sections of our population has evolved an argot about itself that is, perhaps, more informative of its short-term and long-term effects than any number of controlled studies.

Regular smokers recognize a good-quality dagga by its smell and by rubbing it with the fingers, and for this they will pay high prices. They know also that 'good' dagga is only produced in certain areas where both heat and a good rainfall favour abundant growth and transpiration with consequent concentration of resins in the leaf.⁶ This is of great meaning and it demands serious consideration by all those who may be concerned in assessing the harmlessness or evils in connection with

cannabis. Wolff⁸ was astutely aware of these factors when he was investigating the plant in South America and Brazil. He said its 'action is destructive of both character and intelligence' but only after recognizing that any 'delirium' depends upon the concentration of the drug according to its locality of growth and on the sufficiency or not of the resin in the plants due to particular climate and soil. This I believe to be the nub of the disagreements and inconstancy associated with experience, thoughts and opinions about cannabis. It is grown all over the world in different climates and soils, and from all over the world we get different reports and impressions of its effects upon human beings. Hence we get comments made such as 'hashish has been in general use among Eastern peoples as a means of producing ecstasy from remote antiquity'²⁹ but in that part of the world the user takes the dried flowering tops of *cultivated* female plants which are coated with resin (gunjah or ganga), or the resin he scrapes off the leaves or the dried leaves themselves, and as with the hashish eaters of the Middle East (Persia, Arabia, Egypt) the resin is compounded into a flavoured sweetmeat or syrup. This method of ingestion acts somewhat differently from smoking. With high dosage extraordinary feats of valour, derring-do, or running amuck become manifest, for it was in this way that the assassin sect at the time of the early Crusades excited their devoted exterminators to remove unwanted individuals, their zeal for the job being heightened by the consumption of the drug.

If the drug be taken by mouth, absorption is greatly aided if it is taken an hour before a meal. Its action is then felt within 2 hours. If it is taken after a meal no result may be detectable for as long as 6 hours. Of the combined effects of stimulation and depression of the cerebral cortex when the drug is taken by mouth, it is the latter effect which is said to predominate.³⁰

In South Africa the general custom for seeking a degree of intoxication has for long been that of smoking the herb. A method popularly practised before legal prohibition, but now only occasionally, was to smoke it through water held in the mouth, or kept in the dagga pipe, hence the expression 'die daggapyp laat gorrel'. Bantu, Bushmen, Hottentots and Coloureds used essentially the same method. By drawing the smoke through water in a pipe the smoker does not have to hold water in his mouth, the objective being to cool the fumes; an accompanying physical change is a condensation of the volatile active principle before it enters his lungs. Prohibition has rendered this method not readily practicable, for it demands relaxation and leisure; one result of this is to make the smokers draw harder on pipe or cigarette, and faster, so generating more heat and volatilizing more of the principle to enter their lungs.⁶

Besides the quality or effectiveness of the plant varying greatly according to the environmental conditions of climate, soil, season and so on, as mentioned the state of the individual smoking it is also of much importance. There is considerable variation of cannabis³¹ and considerable variation of personality; the variety of combination of the 2 factors appears to produce a variety of symptoms or states of euphoria. There is a striking similarity here with opium. 'The varieties of the effect produced on

different constitutions are infinite.²⁸ It could well be this factual variety of response to the intake of dagga that may have something to do with the variety of impressions which have been uttered. Cannabis is reputed to cause sexual excitement, but there are many who deny this; if there is evidence of sexual excitement the psychological make-up of the smoker probably has much to do with it. The lack of inhibition induced by the drug's erotic charm and images may be conducive to this effect.

SUMMARY

This is a review of practically all the factors both real and unreal which appear to motivate the opinions and actions of many enquirers and authorities who are concerned with the growing world menace of drug addiction, but with dagga in particular. The conclusions arrived at by special investigators and committees about the effects of dagga on the human being are that, in the main, they are detrimental to man, physically, mentally, and morally; that if it does not produce psychotic states it does produce very definite moral deterioration. If these conclusions are accepted on the evidence available by controlling governmental authority they could well find critics who also, on the evidence available, could declare that the conclusions are too rigid and even exclusive of facts which should be seriously considered before any legislative action is introduced.

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DAGGA AND DRIVING*

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This communication is concerned with a topic that has not yet been publicly discussed or expressed. It is the outcome of inquiry into the problems pertaining to the indulgence in dagga by our so-called permissive society which has erupted all over the world, bearing in mind the indigenous characteristics and culture of the different regions.

In *The Times* of 24 July 1967 a conglomerate group of scientists, doctors and intellectual types asserted that 'the law against marihuana is immoral in principle and unworkable in practice'. This is one of the various declarations which have been uttered in recent years for the abrogation of much of the law and the associated ideas against the taking of cannabis or dagga.

In the summary of the report of the Advisory Committee on Drug Dependence¹ it was stated that 'cannabis is a potent drug having as wide a capacity as alcohol to alter mood, judgement and functional ability', and *The Lancet*,² citing this summary, agreed that it is a dangerous drug in that particular respect.

The purpose of this paper is to stress the considerable danger inherent in that 'alteration of mood, judgement and functional ability', and the driving of a motor vehicle. I know of no conviction for dangerous driving while 'under the influence' of dagga, but the reasons for this are pretty obvious. It is difficult enough to bring in a verdict of dangerous driving while under the influence

of alcohol, without thrusting this infinitely more difficult proof upon the shoulders of the public prosecutor. Nevertheless, the possibility, even probability, of such a combination of circumstances justifies its consideration.

It is not my wish to mention the pros and cons of dagga smoking, but some of the effects of dagga smoking upon human beings need to be described in order to appreciate their relationship with the act of driving a motor car. With all pious moralizing put aside, the grave nature of this relationship will disclose itself. Let it be acknowledged openly that the drug is able to excite unmixed pleasure when used moderately. Johnston^{3,4} described its use as producing 'an increase of pleasure'; it is 'the exciter of desire, the cement of friendship, the laughter-mover, and the causer of the reeling gait'. That was written 115 years ago. More detailed impressions have been forthcoming since his time and the sensory perceptions which are most commonly experienced and which have a direct bearing upon my topic are those which Thomas de Quincey so admirably expressed to convey his sensations after eating opium: time lengthens to infinity and space swells to immensity. These altered perceptions are very real to the dagga smoker of almost any type of character or temperament. Exaggeration is the cardinal manifestation of most of the perceptive illusions when they are experienced. But exaggeration also expresses itself in the overt behaviour pattern which is derived from the basic character and temperament of the user of dagga. This is important in that the drug removes the veneer of con-

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