water, unemployment is rife, and crime, poverty and homelessness are a reality in our daily life. The perception that the government or the ANC should solve all the problems is misplaced. These are complex national problems brought about by decades of deliberate and systematic neglect. For these problems to be addressed effectively we require joint effort by all stakeholders including tertiary institutions.

Clearly the situation as it exists cannot be allowed to continue. Not only should we begin to change norms and values within these institutions, but there is also an urgent need to change their human character, such that they begin to reflect the demographic nature of our society. In so doing I believe we shall see the process of democratisation and legitimisation take root within these institutions, and they will become true people's institutions. It is my sincere belief that once this foundation has been successfully laid, we shall begin to see emerging from these institutions diplomats and graduates with a sense of community consciousness. So too shall we start to see a change in research priorities such that academic research is geared towards addressing the real needs of our people.

If the American 'project 3000 by the year 2000' is anything to go by, perhaps our tertiary institutions have a lesson to learn from the Americans. (This project is an initiative of the Association of American Medical Colleges. Its goal is to enroll 3 000 students from under-represented minority groups annually in US medical schools by the year 2000. It is essentially an acknowledgement of racial imbalances brought about by past policies and a commitment to redress them.) After all, our standing in the world community is misplaced. These are complex national problems brought about by decades of deliberate and systematic neglect. For these problems to be addressed effectively we require joint effort by all stakeholders including tertiary institutions.

GREAT DEBATES

**Cannabis sativa — a plea for decriminalisation**

Dagga (marihuana, ganja (the 'holy weed' of the Rastafarians), bhang, hashish, etc.) is the psycho-active ingredient obtained from the environment-friendly hemp plant, Cannabis sativa. It has been used for centuries to induce happiness, relieve suffering and promote spirituality. In the 19th and early 20th centuries it was frequently prescribed by Western medical practitioners for 'nervous ailments'. Its use in Western countries has been banned for about 60 years, but it remains the most widely used illicit recreational drug in the world. An earlier (1920 - 1933) attempt by the USA to prohibit the use of alcohol also failed. The predictable result of such ill-conceived legislation is the creation of criminal drug trafficking.

The most psycho-actively potent of the more than 60 known cannabinoids in the hemp plant is tetrahydrocannabinol (THC). This highly lipophilic substance was first isolated and synthesised in 1964 and, unlike the whole plant extract, has been extensively studied in pharmacological laboratories. During the last 7 years the existence of a natural cannabinoid system in the brain has been firmly established. This discovery is of great neurophysiological interest and may help to elucidate some of the enigmatic aspects of cerebral functioning. The presence of abundant cannabinoid receptors in the limbic system, for instance, is compatible with the fact that cannabis affects predominantly mood, memory and perception. A striking recent finding has been the virtual absence of cannabinoid receptors in the substantia nigra of some patients with Huntington's chorea. This may eventually lead to effective treatment of the involuntary movement disorders which are currently intractable to conventional drug treatment.

Cannabis, like all intoxicants, obviously causes an acute encephalopathy, the manifestations of which vary according to the potency of the drug. Dagga (marihuana) provokes mild and hashish severe intoxication. Mild intoxication cannot be detected by observers unless the characteristic defect in short-term memory retention is specifically sought. Allied to this is an alteration of time sense; seconds are perceived as an eternity. The subject is euphoric and the pulse rate is increased. Some subjects become very anxious as they become aware of weakening of their ego defences.

Severe intoxication augments these effects, and a hypomanic state may develop. A subacute encephalopathy resulting from regular excessive use has been described. A study of American soldiers based in West Germany identified a group of 110 men dubbed 'hashoholics' who were using over 50 g a month of Lebanese hashish with the phenomenally high THC content of 5 - 10%; dagga contains about 1%. None of them were studied before, during and after 2 - 3 months' smoking of 50 - 250 g of hashish a month. The period of observation was 2 years. Six became symptom-free within 4 - 5 weeks of discontinuing hashish abuse, but 3 had intermittent residual symptoms for several
months. The lipophilicity of THC accounts for its delayed excretion.

Some observers have reported that cannabis can cause a chronic irreversible encephalopathy, but a recent review of the literature has not substantiated this. Studies of communities where the use of cannabis is endemic have not shown any convincing evidence that it causes intellectual decline. It should be remembered, however, that young people who abuse cannabis for prolonged periods during critical periods of learning may jeopardise their emotional and cognitive maturation.

There have been many claims for the therapeutic efficacy of cannabis, and it is reputed to be used in a wide variety of traditional medicines in South Africa. Currently great interest is being shown in its effect in reducing the nausea and vomiting that almost invariably accompany chemotherapy. It is claimed to be more efficacious and a great deal cheaper than orthodox medication, which also has the disadvantage of having to be administered orally or by injection. Appetite promotion and weight gain have been reported in patients with AIDS. It has been shown to be a useful adjunct to conventional anticonvulsant therapy in temporal lobe epilepsy, which is notoriously difficult to control. Its analgesic and hypnotic effects have frequently been cited.

The effect of cannabis in improving mood may make it a useful antidepressant. Some schizophrenic patients claim relief of 'negative' symptoms from its use. Contrary to popular belief it does not cause violence but, if used in pure form, reduces violence and may prove of value in controlling rage attacks and episodic dyscontrol.

Careful, well-controlled studies of cannabis have been much hampered by legislation prohibiting its use. Surely South Africa should follow the example of Australia, which has recently decriminalised it for medical use. The facts, as opposed to myths, can only be established by well-controlled scientific study.

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Cannabis sativa — 'deceptive weed'?

Drugs that affect behaviour have been known since antiquity. Various 'fashionable' substances are used in different age or socio-economic groups, dagga being one such among adolescents. Only in relatively recent years have the serious social and medical consequences of drug abuse and the resulting drug dependence been widely recognised. The drug abuse problem is becoming increasingly complex and no simple solution is possible. Cannabis abuse is no different.

Cannabis (dagga) is a halogenine. The derivatives of Cannabis sativa owe their intoxicating properties to a psycho-active substance, delta-9-tetrahydrocannabinol (THC). The concentrations vary widely, and this may explain the variety of effects reported. The very high fat solubility results in persistence of the metabolites and the potential for accumulation with regular use. With the use of cannabis, its dose cannot easily be established owing to amounts used and varying potency of the materials consumed. It is also almost inevitable that the drug will not be taken by itself. Often the cannabis abuser finds it necessary to mix the drug with other substances, including nicotine or methaqualone (Mandrax), which have powerful effects on their own and extreme effects in combination. This combination with other preparations is presenting a whole new range of problems (particularly with Mandrax) on the contemporary scene.

As far back as 2700 BC cannabis was known to the Chinese and recommended for various uses. It has been cultivated as a drug for many centuries and in Arabia is known as 'hashish', which is said to have given rise to the word 'assassin' — stemming from a murder reported by Marco Polo to have been committed under the influence of the drug.

Suggestions that cannabis may have a place in the practice of modern medicine are frequently offered and investigated but should be approached with caution, in view of inadequate research and contraindications due to various and significant side-effects. The notion that cannabis is harmless has enjoyed a high degree of acceptability in the past, with only a minimum of scientific support. It has now been suggested that 'the grass may no longer be greener'. Several respected groups and many individuals have in the past advocated delegislation of cannabis on the basis that small amounts may not be harmful. At least some of these individuals seem to have ignored the evidence available from clinical practice. In the past few years, evidence has accumulated to suggest considerable potential hazards of cannabis in its various forms. That is not to say that one joint of dagga, or even a few joints, will definitely cause significant harm — the chances are that it will not. The effects of cannabis are cumulative and dose-related, and prolonged heavy use or less frequent use of a more potent preparation are associated with many different problems.

Cannabis may be described as having immediate or later effects. Acute effects are experienced most quickly when it is smoked. Smoking brings on intoxication of short duration. The degree of intoxication depends on the dose taken, the individual characteristics of the user, the social culture and
the circumstances under which it is taken. The mental effects described include a feeling of euphoria, exaltation and a dreamy sensation accompanied by a free flow of ideas. Senses of time, distance, vision and hearing are distorted. Sometimes panic and fear are experienced. Hallucinations develop with large doses. In the company of others, the cannabis user is talkative and laughs easily, but when alone is more often drowsy and quiet. The initial period of stimulation is frequently followed by a moody reverie and drowsiness. The user's ability to perform many tasks normally or safely (particularly driving a motor car) may be seriously impaired. Other effects include dizziness, dry mouth, dilated pupils, burning or bloodshot eyes, urinary frequency, diarrhoea, nausea, vomiting and hunger. Smoking also frequently produces chronic laryngitis and bronchial irritation. Cannabis inhibits testosterone, but sexual potency appears unaffected. Cannabinoids cross the placenta and in view of their long elimination time may have adverse effects on the fetus; they also inhibit DNA synthesis, increasing mutation potential and the risk of spontaneous abortion. Present clinical experience suggests that cannabis does not produce physical dependence or an abstinence syndrome, but Jones et al. report a mild withdrawal syndrome with irritability, anorexia and insomnia with rebound REM in cases of heavy regular consumption to daily doses of 200 mg THC. The mild nature may be due to the store of THC in the lipid tissues. Once the user has established the amount of cannabis necessary to achieve the euphoria there is little tendency to increase the dose, which probably explains why tolerance does not usually develop. Moderate to strong psychological dependence may develop in accordance with the user's appreciation of the drug's effects. As a result of that dependence, the user may be motivated to increase the number of daily doses. Cannabis tends to reduce inhibitions and increase suggestibility, which explains why the individual under its influence may engage in an activity he would not ordinarily consider. Although the cannabis smoker sometimes feels himself capable of extraordinary physical and mental feats, he seldom acts to accomplish them for fear of disrupting his euphoric state. But what is clear is that the drug can have an unpredictable effect, even on persons accustomed to its use. Whether dagga can cause unpredictable violence is not certain, but particularly in association with alcohol and other drugs there is an increased risk. Dagga probably merely facilitates violence. Prolonged, heavy use may result in a delirious state, which may lead to a violent act. The question whether a person should be considered to be less responsible while under the influence of drugs is bound to arise with increasing frequency in the criminal courts in the future. Abuse of cannabis facilitates association with social groups and subcultures involved with the more dangerous drugs. Transition to use of such drugs would be a consequence of this association, rather than an inherent effect of cannabis. The harm to society derived from the abuse of cannabis rests in the economic consequences of the impairment of the individual's social functioning and his enhanced proneness to asocial and antisocial behaviours. Adverse psychiatric side-effects vary in intensity from anxiety states and panic reactions to acute toxic psychosis. The psychotic state may be dose-related or act as a precipitating factor in a susceptible person. Co-morbidity studies in psychiatric patients demonstrate a poor prognosis and outcome. Cannabis intake may precipitate episodes of acute mental confusion reminiscent of an acute brain syndrome, which may be linked to reports of a destructive effect on the creative faculties of the mind and possible irreversible brain damage. It also results in personality changes that lead to marked deterioration of what is considered good mental health. Clinical descriptions of 'amotivational syndrome' and 'flash-backs' may be part of the spectrum of effects.

As regards the social effects of cannabis, one aspect is clear. If the drug is smoked in solitude this is almost invariably a sign that the user is already disturbed, although whether he was so before reaching this point or before taking cannabis is almost impossible to say. There is usually a marked social ritual in the use of cannabis. The role of the premorbid mental make-up in the causation of drug dependence is generally accepted in a high proportion of cases. It stands to reason that the greater the psychological personality defects, and the greater the person's difficulties in establishing and maintaining interpersonal relationships, the more likely it is that he may find some emotional relief by using drugs to which access is easiest.

The outlook tends to be less good for young addicts than for more mature drug abusers, probably because of their greater personality maladjustment or their lesser social stability. Clearly many other environmental and social factors are involved. It is deceptive to consider cannabis use as merely a passing youthful fad.

Cannabis use, particularly among the youth today, is part of the pandemic toxicomania that has developed in the second half of this century. Cannabis is a potentially dangerous drug and as such a public health concern, especially with regard to the increased use evident in adolescents.

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