



# The Fascinating World of Drugs

part one of a two part article on drugs by Gary Gayda

'Four-fifths of the human race uses some sort of drug daily and seemingly always has.'

--Dr. Norman Taylor.

I have been taking drugs for over 10 years, Theophylline and theobromine are almost constantly in my veins; other drugs have occasionally joined them.

But before you run to the nearest RCMP office to turn me in for 'turning on', I have some news for you--you, too, are a walking pharmacy. Today, you may very well absorb caffeine, nicotine, and ethyl alcohol into your body. They are all drugs, and just like the theobromine and theophylline (and caffeine) in tea and cocoa, have widely varying effects on the central nervous system. Add cough medicines and diet formulae to the list, and the scope of drug-taking becomes apparent.

Drugs are substances--animal, vegetable, or mineral--which cause changes in the body. They can generally be classed as stimulants, depressants, or hallucinogens. Many drugs produce effects which fall within all three categories.

Generally, there are three levels of drug use: occasional, habitual, and addictive. The occasional user of medically-prescribed drugs or medically-approved patent medicines rarely runs the risk of developing a drug habit or addiction. However, repeated use of such drugs as nicotine or caffeine can lead to a drug habit. Breaking the habit, though often annoying and sometimes irritating to the body, is not physiologically upsetting. Drug addiction is another matter. It is defined by the World Health Organization as 'a state of periodic and chronic intoxication detrimental to the individual and to society, produced by the repeated consumption of a drug (natural or synthetic). Its characteristics include, continues the WHO, 'an overpowering desire or need (compulsion) to continue taking the drug and to obtain it by any means; a tendency to increase the dose; a psychic (psychological) and sometimes a physical dependence on the

drugs.' Most medical authorities would omit 'sometimes' in the third characteristic, for drug addiction alters the chemical composition and physiological needs of the body; and are stricken with horrifying 'withdrawal symptoms'.

## STIMULANTS

Caffein--present in coffee, tea and cocoa--is probably the most popular stimulant in the world. It acts on the higher levels of the brain, the cerebral cortex, to produce a gentle, agreeable stimulation. Thoughts are better integrated, sensations are more keenly appreciated, muscular capacity is increased, and the sense of fatigue is dissipated under its effects. However, in large doses it produces excitement, delirium, hallucinations, and possibly convulsions.

Coffee, made from the red, cranberry-like fruit of coffee arabica, is the favourite caffeine-carrier in North America; 3 times as much coffee is used as tea and chocolate combined. Called kahweh (that which stimulates) by the Arabs, it was introduced in the 17th century. Tea, from the leaves of Camellia thea, is Britain's favourite: annual consumption is 10 pounds per person. Once considered a sinful aphrodisiac, it has today become the main element in that relaxing break prized so highly by York's female resident students--tea-time. Three cups of tea contain 5 grains of caffeine, the normal medical dose. Over-indulgence can cause the serious symptoms described above. Chocolate, called Theobroma cacao by Linnaeus (theobroma--'food of the gods') is produced in cacao beans, which grow on the trunk and older branches of the tree. Inside the yellowish-red, 6-8 inch pods are the cacao beans which are the main raw product in cocoa and chocolate candy.

Besides caffeine, tea and cocoa contain two additional alkaloids: theobromine and theophylline. Theobromine is less active than either of the other two alkaloids. Theophylline, while less stimulating than caffeine to the central nervous system, has a more powerful effect on the heart, wi-

dening the coronary artery.

Nicotine, one of the most poisonous alkaloids in the world (in its pure form and in a lethal dose, it kills with the rapidity of cyanide), is usually absorbed into the body through cylinders of smoking vegetable matter. Since a fatal dose of nicotine is one third of a grain (1/1200th of an ounce), and an ordinary blend cigarette produces only 3-4 milligrams, the average smoker need not fear imminent nicotine paralysis. If smoke is inhaled, 90% of the cigarette's nicotine is absorbed; if not, only 25% is sent into the system. Nicotine produces a temporary stimulant action, followed by a depressing action on the central nervous system. A mild 'addiction' to cigarettes does occur, since a smoker builds up a tolerance for the drug and increases his dose. Tobacco smoke also contains tars and carbon monoxide, which have been proved to be cancer causers and/or catalysts. Snuff, cigars, pipes, and chewing tobacco are also used to invoke a nicotine nirvana. It has even been drunk, dissolved in water. Tobacco is also big business: the average cigarette smoker spends \$125 a year on cigarettes. The U.S. public in 1961 spent 9 billion dollars on tobacco. In 1962, they parted with \$7 billion for 528 billion cigarettes. But sales are not as brisk today as in former years.

Amphetamines have a close relationship to naturally occurring acrenaline. Their stimulant effect is often followed by anorexia (loss of desire or appetite) and mood changes the latter tending towards euphoria changing into irritability. Some of these substances when taken excessively over a period of time are liable to lead to a toxic psychosis resembling schizophrenia.

Amphetamine sulphate (alias Benzadrine, 'pep pills', 'Ben-nies') gives to its user a feeling of liveliness and energy; wards off sleep; and often results in dizziness, hallucinations, and mental confusion. Dexanphetamine sulphate (Dexedrine) has a greater effect on the central system and has been used effectively in the treatment of obesity, narcolepsy, and seda-

tive overdose. Methylamphetamine hydrochloride (Methedrine, Pervitin) and ephedrine hydrochloride are also strong stimulants of the central nervous system. All of these amphetamines are considered non-addictive in moderate amounts, but are dangerous in any amount for those with weak hearts and circulatory problems. Beyond their medical use, they are taken most frequently by cramming anxious athletes, students, groggy truck drivers, and James Bond. It should be remembered that these drugs stimulate only certain sense centres in the brain; other areas--particularly perception and motor centres--remain as fatigued as the rest of the body. Continued use of this drug can therefore result in physiological and mental over-exertion. Benzadrine, those exam energizers, and Dexedrine, the dieter's diet, should be used only when medically prescribed. And watch those nasal sprays--they're Dexedrine solutions.

Other stimulants similar to amphetamine are pipradol (Meretran) and methyl phenidate (Ritalin). Cocaine, taken from the leaves of *Crythroxylon coca*, has a long history of use in Brazil and Peru. For centuries, Peruvian Indians worshipped it as a god, attributing divine powers to its stimulant effects. Leaves of the plant were mixed with lime or vegetable ashes, which aided in the extraction of the active principle, and chewed. A modified form of this recipe is still consumed by poorer Indians in Peru and Brazil. The 'civilized' world takes the purified alkaloid cocaine, which can be injected into the blood stream by a hypodermic syringe, quickening its effect. The higher areas of the brain are effected first. Under its influence, men grow talkative, restless, and excited; experience ecstatic sensations of great physical and mental power; and forget fatigue and hunger. But these sensations are soon followed by hard depression. To relieve this, cocaine is taken again. Unfortunately for its user, it is very toxic. The mind begins to suffer delusions. Paranoic panic becomes evident and, because of this, the cocaine user can be dangerous as he tries to protect himself from a 'persecuting' world. Though not an addict, the cocaine user develops a strong habit in taking the drug, and can be violent because of his paranoia. The 'dope fiend' label which is unjustly placed on all drug addicts actually belongs to the cocaine user. There are more continual users in England than in the U.S. Like other illicit drugs cocaine has developed a language of its own. 'Big Bloke', 'bouncing powder', 'Charlie Coke', 'happy dust', 'Corinne and the girl' are some of its aliases! And a 'happy Duster' 'blows snow' by snuffing cocaine up his nostrils. This is the ultimate in refined cocaine-taking, and its practitioner is referred to as a 'snowbird'.

Convulsants such as the analeptics and strychnine are used as sleeping pill antidotes. Strychnine is also employed by addicts to 'fortify' weak heroin. LSD-25 and the opiates, while they do have stimulant properties, are properly classified as hallucinogens, and will be discussed in the next article as such.

## DEPRESSANTS

Rauvolfia serpentina was the first 'tranquillizer'. Discovered (by the Western World) in India in 1931, it soon was enjoying widespread medical use, for alkaloids in the plant have the ability to lower blood pressure and modify the mood of psychiatric patients suffering from anxiety. Analgesics and antipyretics, e.g. acetyl salicylic acid (aspirin) tend to have a mild sedative action, but their main attributes are their ability to arrest rising