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**ALCOHOLISM, A GENUS AND  
SOME OF ITS SPECIES\***

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IN A RECENT publication<sup>1</sup> the author came to the conclusion that "alcoholism" was not a specific, but a generic term. The genus seems to be a broad one, as may be concluded from what is called alcoholism on the North American continent, in France, in Finland, in Portugal, and in many other countries. Furthermore, within a given nation, various students of alcoholism, according to their particular experience, may have different specific phenomena in mind when they use the generic term alcoholism.

When one scans these various "alcoholisms", it appears that they have only two elements in common: one is drinking and the other is damage (individual or social, or both) incumbent upon the drinking. The two elements form the basis for the definition of the genus alcoholism.

Evidently, a genus is usually too broad to permit specific questions. The latter will have to pertain to given species of the genus. Let us take such a botanical genus as *Hibiscus*, which embraces some 200-odd species. Even such a simple question as "Is *Hibiscus* a tree?" cannot be answered with a straight "yes" or "no". As a matter of fact, the question would not make much sense as some of the species of *Hibiscus* are herbs, some are shrubs, and some are trees. It would be, of course, within reason to ask "Are some of the species of *Hibiscus* trees?"

The genus alcoholism has not as many species as *Hibiscus*, but it apparently has a sufficiently large number of species, which limits meaningful questions about the term alcoholism as used here in a generic sense. If we define the genus as any drinking which brings about any damage, it would seem that we cannot even ask whether alcoholism is a disease or not, but we would have to name or describe one or more species of the genus in order to make it possible to give a reasonable answer to the question.

A noted European student of alcoholism said that it was an idle question to ask whether alcoholism was a disease provided that something was done about alcoholics. This statement does not seem to be cogent, as the approaches towards the remedial and preventive aspects of alcoholism would necessarily vary a great deal according to whether the species represents a disease *per se*, whether it is the symptom of a disease or whether it is neither but primarily a social or economic phenomenon, and so forth.

For the purpose of this paper it would not seem appropriate to inquire into the number of species of alcoholism or to describe a large number of the possible species. It will suffice here to delimit those four or five species of alcoholism which may be questioned whether they represent a symptom of an underlying disease, a disease *per se*, or neither. An attempt will be made to present these species in a schematic form, having in mind the possible utility of such a schematic presentation for purposes of diagnosis and decisions as to treatment.

The tabular presentation of the species of alcoholism to be considered is divided into three main sections: (1) the etiological elements of various species of alcoholism, (2) the elements of alcoholic process, and (3) the type of damage incumbent upon drinking. The division of the matter into these three sections is somewhat arbitrary and to some extent overlapping, but it seems to contribute to a more systematic discussion.

**ETIOLOGICAL ELEMENTS**

Under this heading psychological vulnerability, physiological vulnerability, sociocultural elements and economic elements will be considered. The absence or the presence of these elements and their degree is designated by the usual notation of zero to four plus.

*Psychological Vulnerability*

This term is used in preference to neurosis, neurotic behaviour pattern, psychopathy, etc., as in some species of alcoholism one cannot speak of gross psychological liabilities, but sometimes rather of small psychological deficits, such as some lack of optimism or a slight degree of self-confidence which cannot be regarded as exactly abnormal. The term

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TABLE I.—CHARACTERISTICS OF SELECTED SPECIES OF ALCOHOLISM

Designation of given species of alcoholism	Etiological elements of various species of alcoholism				Elements of the alcoholic process			Type of damage incumbent upon drinking			
	Psychological vulnerability	Physiological vulnerability	Socio-cultural elements	Economic elements	Acquired increased tissue tolerance	Main addictive features (see text)	Nature of dependence	Nutritional and physical habits	Progressive nature	Physical and/or mental	Socio-economic
Alpha alcoholism	+++ to +++++	0 to +	+ to (++++)	0 to (++++)	+ to ++	0 No loss of control but deliberate undisciplined drinking	Purely psychological	Good to poor. May start adequately and deteriorate after several years of inadequate nutrition	Slight, in the sense that there are no great psychological and social behaviour changes except perhaps for some guilt about drinking, remorse and resentment, the main progression being the development of possible organic and socio-economic damage	+ to +++++	+ to +++++
Beta alcoholism	+	0 to +	+++ (Culturally determined heavy weekend drinking)	0 to (++++)	+ to ++	0 No loss of control	None—unless socio-cultural dependence is considered	May start as adequate but after several years becomes totally inadequate	No progression, except for increase in number of arrests with incumbent social damage and particularly for the emergence of "diseases of chronic alcoholism", which form a stipulation for the designation beta alcoholism	+++	+ to ++
Gamma alcoholism	+++ to +++++	+++ to +++++	+ to (++++)	0 to (++++)	+++ to +++++	++++ With loss of control but ability to abstain entirely	First, psychological dependence and later, marked physical dependence as manifested by the development of the main addictive features	May start with fair habits, most likely deteriorating at the stage of prolonged benders or even at earlier stages	Strongly marked progression in terms of changes in psychological and social behaviour ("phases of alcoholism"), changes due to the addictive process and the possible emergence of chronic alcoholic diseases	+ to +++++ But withdrawal syndrome always present after several yrs.	+++ to +++++
Delta alcoholism	+	+++ to +++++	+++ to +++++	++ to +++++	+++ to +++++	++++ With inability to abstain even for 24 hours, but no loss of control unless in some instances as a very late development	Physical dependence, although at a late stage psychological dependence could develop too	Generally fair, but may become inadequate after 15 or 20 years	Some progression in terms of psychological and social behaviour largely emerging after many years and in terms of the addictive process as well as the possible emergence of organic damage	+ to +++++ But withdrawal syndrome always present after several yrs.	+++ to +++++ as a late development

Epsilon alcoholism ————— Knowledge of this species or perhaps several species of true periodic alcoholism is too scant to permit of rating and delimitation —————

psychological vulnerability has a very wide range, from such small psychological deficits as mentioned to the neuroses and psychoses.

In any of the five species presented in the table, psychological vulnerability of at least one plus must be postulated. In the species to which is attached +++ or +++++, the three plus denotes the initial presence of neurotic response patterns and neuroses as well as other psychopathic conditions except psychoses, while four plus denotes the initial presence of a psychosis or at least psychotic predisposition.

*Physiological Vulnerability*

The role of physiological vulnerability is hypothetical. There are, however, sufficient indications to consider certain physiopathological elements as possible factors in some of the species under consideration. Certain biochemical lesions, liver damage, certain enzyme deficiencies and vitamin deficiencies as well as some endocrinopathies have been claimed to be the primary causes for heavy alcohol intake.

The author does not subscribe to such etiological theories, but the fact remains that such physiopathological elements are frequently seen in alcoholics. The absence of such elements may protect the cell metabolism against adapting itself to alcohol and thus avoid the development of an addictive process, but, on the other hand, the presence and degree of physiopathological elements may facili-

tate adaptation of the cell metabolism to alcohol and thus to physical dependence. The presence or absence of these physiopathological elements and their intensity may account for the facts that some heavy drinkers never develop physical dependence while others do, and that in some heavy users of alcoholic beverages, physical dependence develops after 3 years and in others after 7 to 15 years.

In those species of alcoholism in which an addictive process, in the strict pharmacological sense, develops, one should look for some of the physiopathological elements enumerated above. Such vulnerabilities could be either pre-existent to the onset of heavy drinking or they could be resultants of the stresses produced by heavy alcoholic intake, and after their appearance could exert their influence upon the alcoholic process. The presence or absence of such physiopathological elements would have to be checked also in those species of alcoholism which do not show an addictive process, particularly if such alcoholism has been present for 15 or 20 years. The checking of such elements in all the main species of alcoholism would validate or invalidate the assumption that they play a role in the absence or presence of the addictive process in various species.

*Sociocultural Elements*

The sociocultural elements which can play an important role in the genesis of a given species of alcoholism are largely attitudes towards drinking

and drunkenness, particularly the degree of intoxication which is socially acceptable, drinking customs and drinking patterns. Where there are strong social pressures on drinking, such as when it is presumed offensive to refuse a drink, when it is taken for granted that a visitor must be offered a drink, when at a party it is felt that the pace set by some key figure must be observed by the others, and when because drinking is connected with nearly every other activity, alcoholic intake is fostered to such a degree that the drinker becomes exposed to the risk of the addictive process or, in the absence of such a process, at least of serious damage.

The predominant drinking pattern among heavy drinkers in France and some other viticultural countries is to distribute large quantities of wine in small instalments over 16 hours of the day. Thus in spite of the possible absence of overt intoxication the cell metabolism is continuously conditioned to the presence of alcohol.

On the North American continent and in most Anglo-Saxon countries, society accepts the use of alcoholic beverages at certain times of the day and in certain places only, so that the heavy drinkers drink concentrated spirits in what may be called a concentrated time, and the conditioning of the cell metabolism differs therefore from the conditioning as seen in many viticultural countries. The drinking patterns are never exclusive in any given country, but some may be regarded as predominant patterns. Thus we might find in Anglo-Saxon countries a minority, sometimes a sizable one, following the predominant drinking pattern of viticultural countries, while in the latter there may be minorities which follow the predominant drinking pattern of Anglo-Saxon countries. Mention must be made also of certain ethnic customs which expect every male wage-earner to indulge in more or less heavy weekend drinking while there may be little or no drinking during the rest of the week.

As one of the most important factors in the exposure to the risk of alcohol addiction must be mentioned the general social acceptance of daily high or low consumption. Thus for instance, in France, a national survey (Bastide<sup>2</sup>) has shown that the French as a nation regard a daily intake of nearly two quarts of wine as not being harmful either to the body or to the mind of a working man. Furthermore, non-users of alcoholic beverages in France probably do not constitute more than 5% of the adult population. On the other hand, on the North American continent and in Scandinavian countries we may find a rejection of any kind of alcohol consumption in about one-third of the adult population, and the idea of a daily intake of an alcoholic equivalent of two quarts of wine would be met with consternation in the remaining two-thirds of the adult population. These differences in the degree of acceptance of high daily intake may account for the predom-

inance of high psychological vulnerability required for the addictive process in the Anglo-Saxon countries, while in the viticultural countries, individual psychological motivation plays a much smaller role in the addictive process. Volumes could be written and are written on the socio-cultural elements in the etiology of various species on alcoholism, but in the framework of a brief paper, the above few examples must suffice.

As to the notation in the column headed "Socio-cultural elements," what is stipulated is that in the species of alcoholism presented in the table, as well as in any other species of alcoholism, at least one plus must be assumed, since the society must be at least one that makes the custom of drinking possible. In some species, the effect of social attitudes and customs may be so great that they outweigh any individual psychological element to a high degree. In two of the tabulated species, the notation + to (+++) has been used. The appearance of three plus in parentheses means that while in a given society the sociocultural elements may be highly in favour of a large alcoholic consumption, in some given species of alcoholism they do not necessarily play an important role.

#### *Economic Elements*

Actually some of the economic elements that are sometimes invoked, and in some cultures as etiological factors, could be called environmental factors, such as poor housing conditions, which drive the slum dwellers into the tavern or bar ("the poor man's club") in order to escape from the drabness of their abodes.

More importantly, however, by economic elements we mean such matters as the price of alcoholic beverages, particularly in relation to the price of staple foods; the stake of a nation or of a large social group in the production and sale of alcoholic beverages; the identification or non-identification of society as a whole with the vested interests; the structure of the vested interests and the number of sales outlets in relation to the adult population.

The economic factors may to some extent be responsible for social attitudes, and thus the socio-cultural elements and the economic elements cannot always be differentiated by stringent criteria.

In order to clarify the above statements it may be pointed out that in France, for example, there are 8 million men who are entirely or partially dependent for their livelihood upon the sale and production of alcoholic beverages. Together with their wives and other adult family members, they represent close to one-third of the French electorate. Furthermore, the French nation as a whole tends to identify itself with these vested interests which are composed to a much larger extent of small independent individuals who are struggling to make ends meet rather than of large corporations. Where the vested interests are constituted by large corporations, there is no tendency on the part of the nation to identify themselves with them. Where

a strong identification exists between the nation and the vested interests, the attitudes towards alcoholic beverages will tend to be influenced favourably towards their use, as is manifested in France by the acceptance of such large daily intakes as approximately two quarts of wine. (For the past few years, the French government and some voluntary societies have been trying to lower this acceptance to about half that amount.)

In some of the species of alcoholism given in the schematic presentation, the force of the economic elements is denoted as zero or rather 0 to (+++), and the parenthetic three plus is to be interpreted in the same way as has been explained under the heading "Sociocultural elements."

#### ELEMENTS OF THE ALCOHOLIC PROCESS

Under this main heading will be considered: (1) Acquired increased tissue tolerance, (2) Main addictive features, (3) Nature of dependence, (4) Nutritional and physical habits, and (5) Progressive nature of alcoholism.

#### *Acquired Increased Tissue Tolerance*

The emphasis here is upon tissue tolerance in contrast to acquired psychological tolerance. The latter involves learning certain of the effects of alcohol on psychological functions, and learning the conscious or unconscious compensation for such effects. On the other hand, the acquired tissue tolerance refers to psychophysiological functions outside of volitional control and, therefore, which could not be compensated through the learning process. Evidence for acquired tissue tolerance has been produced by experimental research workers, and as examples may be cited a lowering of the effect of alcohol on flicker fusion positional nystagmus, certain electroencephalographic phenomena and so forth, in heavy drinkers and alcoholics.

Rapid acquisition of increased tissue tolerance, and particularly one of high intensity, may play a major role in the process of addiction, that is of the development of physical dependence. Yet while there is a relation between acquired tissue tolerance and the adaptation of cell metabolism to the presence of alcohol, the two phenomena must be distinguished from each other.

Acquired tissue tolerance of a limited degree will develop in all regular users of alcoholic beverages in large or medium amounts, but does not necessarily forebode the progressive process of addiction. On account of this latter feature, acquired increased tissue tolerance is arbitrarily separated from the "main addictive features" with which they could be logically included.

#### *Main Addictive Features*

Addiction in a psychological sense is no more than a figure of speech and is extended to such matters as gambling, kleptomania and so forth. The term addiction should be used in the strict

pharmacological sense only, and that involves stringent criteria. The criteria are acquired increased tissue tolerance (this has been made separate in the table of schematic presentation as it may occur to a limited degree only, and without the development of addiction), a quantitative increase of the drug in question, withdrawal symptoms, and craving. The withdrawal symptoms are evidence that cell metabolism has adapted itself to the presence of alcohol, and the craving — which is largely the need for elimination of the withdrawal symptoms — signifies the development of physical dependence upon the drug. In the instance of alcohol the addictive process is coupled either with "loss of control", but leaving intact the ability to abstain after a bout, or with the inability to abstain even for 24 hours but without loss of control over the amounts ingested.

The degree of the main addictive features in the various species of alcoholism is either 0 or + + + +. As addiction develops, one could speak of milder and severer degrees of various symptoms, but, by and large, it comes to the question of presence or absence of such symptoms.

#### *Nature of Dependence*

Dependence can be on the symbolic level (purely psychological) or on the physical level. Furthermore, symbolic dependence may precede the physical dependence; in other instances the sequence may be reversed; and lastly there are species of alcoholism in which there is neither psychological nor physical dependence, but largely a dependence on social customs (e.g. the custom of heavy weekend drinking in certain ethnic groups). We may speak in such an instance of a sociopsychological factor, but there is no need to assume particular individual psychological deviations.

#### *Nutritional and Physical Habits*

Quantity and quality of the diet, regular sleeping habits or their absence, and proper physical exercise or its lack may contribute to a significant extent to the damage incumbent upon the heavy drinking in various species of alcoholism. In some instances, poor nutritional and physical habits may pre-date the onset of heavy drinking and in other instances they may develop only later in the course of the drinking career.

#### *Progressive Nature of Alcoholism*

It is frequently pointed out that "alcoholism is a progressive disease." Generally when this statement is made, students of alcoholism have in mind one or the other of the two true addictive species of alcoholism in which there is a progression from social drinking to symptom-relief drinking and after various psychological, physiological and social behaviour changes, the eventual occurrence of loss of control or inability to abstain or both. There are, however, species of alcoholism in which the pro-

gression is limited to the ultimate development of the so-called diseases of chronic alcoholism, without the dramatic changes depicted by Jellinek.<sup>3, 4</sup> The nature of the progression and its degree is of the utmost importance in diagnosing the species of alcoholism which a given patient may represent.

#### DAMAGE INCUMBENT UPON DRINKING

Since some damage must be present in any species of the genus alcoholism, the table of characteristics of the selected species in question gives in the last two columns an expression of the degree of damage in the physical and mental field and the socioeconomic field respectively. Physical and mental damage refers not only to the so-called diseases of chronic alcoholism, but also to subclinical impairment of various metabolic aspects, lowering of disease resistance, accident proneness and so forth.

The socioeconomic damage may range from an undermining of the family budget to the breaking up of the family, impaired earning power, loss of jobs and other behaviour which threatens society.

The explanation of the various table headings discussed above will make it possible to interpret the entries in the table and to gain a picture of at least four of the selected species.

The various species delimited in the table could be given names, but it seems preferable to label them with letters of the Greek alphabet, as the various words that could be selected for naming the species could have different meanings for various readers. Although the designations alpha alcoholism, beta alcoholism, etc., appear in the first column, this is not intended to mean that the labels are being defined. The procedure is actually that of describing a species and then giving it a label, but placing the label in the last column seems awkward.

From the various entries in the table, what is designated as alpha alcoholism cannot be regarded as a disease, but as a symptom of an underlying disorder. On the other hand, the species designated beta alcoholism seems to be neither a disease nor a symptom of a disease, the drinking pattern in this species leading to serious damage in the form of the so-called diseases of chronic alcoholism. We are dealing here with culturally determined weekend drinking which, coupled with poor nutritional and physical habits, leads to serious damage of the

drinker's health. Without the occurrence of such damage, the diagnosis of beta alcoholism should not be made. In the instance of the two species designated as delta and gamma alcoholism respectively, it would seem legitimate to regard these two species, characterized by the addictive process, as diseases in their own right, particularly if it should be found that original or acquired physiological vulnerabilities had played a role in facilitating the addictive process. As far as the fifth selected species labelled epsilon alcoholism, which covers true periodic alcoholism, is concerned, no evaluations have been made under the various headings. As a matter of fact, it may be questioned whether epsilon alcoholism is a species. There seems to be a great deal of heterogeneity among the phenomena which are described as true periodic alcoholism. Knowledge of this species, or rather one should say subgenus, is insufficient for evaluation and conclusion. From what is known about true periodic alcoholism, it would appear, however, that the various forms of periodic alcoholism are symptoms of various underlying diseases rather than diseases in themselves.

#### SUMMARY

A survey of what is regarded as alcoholism in various cultures, and even within the subcultures of a given country, shows that alcoholism is a genus with many species. Only two factors are common to this genus, namely drinking and damage resulting from it. Thus the definition of the genus cannot but be a vague one. On the other hand, various species of the genus can be delineated in stringent terms. Five of the most common species of alcoholism are presented in a schematic form which takes into account the degrees of physiological and psychological vulnerability, as well as sociocultural and economic factors in the etiology of the species in question and various elements of the "alcoholic process". It is suggested that only two species of alcoholism, which represent addiction in the strict pharmacological sense, may be seen as diseases. Two other species may be symptoms of an underlying disorder, and one species, although it produces bodily and mental complications, is neither a disease nor a symptom of a disease but is the result of cultural drinking patterns in certain ethnic groups.

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