Editorial

The Search for the "Coronary" Archetype
and the Damocles Test

A BABY born in 1901 had one chance in three of dying of an acute disease during his lifetime; by 1945 this chance was only one in ten. In four out of five cases he will now live to die of a chronic disease.

Civilization usually preserves its members for more lingering and partial deaths, save in some instances, when sudden vascular occlusions or ruptures occur.

This is not a new observation. Emerson, in his studies of the medical statistics of Philadelphia in 1827 wrote "among barbarous nations and the poor of civilized ones, acute diseases produce the mortality. Among the better classes of civilized nations, chronic maladies abound."

Western man, faced with this prospect, and having been so notably successful in abolishing acute diseases, is trying desperately to find out why he is not immortal. Particularly is he seeking to discover why some approach immortality more nearly than do others, or at least attain 110 years of age, the probable biological limit of man's life.

True, Old Parr is said to have lived to 152 years and 9 months, and to have married a widow when he was 120 years old. Even at this age prosperity overcame him. The autopsy report by Dr. Harvey November 16, 1635, says, "In short, all his inward parts appeared so Healthy, that if he had not changed his Dyet and Air, he might perhaps have Lived a good while longer. But coming out of a Clear, Thin and Free Air, into the Thick Air of London, and after a Constant, Plain and Homely Country diet, being taken into a Splendid Family [of the Earl of Arundel], where he fed High and Drank plentifully of the best Wines; whereupon the natural Functions of the Parts of his Body were overcharged, his Lungs obstructed, and the Habit of the whole Body quite Disordered, upon which, there could not but soon ensue a Dissolution." So much for high living and air pollution 300 years ago!

Atherosclerosis, and especially occlusive disease of the coronary arteries, is the commonest destroyer of the American male. Epidemiology has turned its technique to the discovery of the prevalence of the misadventure of acute coronary thrombosis, and myocardial infarction, arising in the course of a ubiquitous vascular degeneration. (We shall avoid a discussion of whether or not atheromatosis is a "disease.")

It seems most practical, at present, to select for study this abrupt, and usually diagnosable event, since there are no tests to measure generalized atherosclerosis.

In the dismaying complexity of atheromatosis, thrombosis, and vascular vulnerability, the epidemiologist tries to find out how common is this ischemic disaster in a population, but beyond this, to determine the "profile" of the victim, the risk factors, the most likely elements of a formula, which, when combined, will show him the individual peculiarly susceptible to acute coronary closure. He takes those who have recovered from an acute myocardial infarction and tries to define the ways in which they are idiosyncratic.

That is what Hatch and his associates are reporting in this issue of *Circulation*. Quite rightly they believe that no preventive regimen can be applied until these peculiarities of the "coronary prone" individual are known. It may be that even then preventive measures will be impractical.

What Hatch and his group have done is to compare by a battery of metabolic tests 20 young men, who survived acute myocardial infarction, with 20 age-matched healthy subjects–10 business and professional men and
10 prisoners. The importance of the study is that it was dynamic—the response to testing was measured.

One interesting finding was the low serum cholesterol, and small variance, in the prisoners. This agrees with the observation, in the "Cooperative Study of Lipoproteins and Atherosclerosis," of the low level of serum cholesterol and relative freedom from coronary artery disease, in the inmates of federal penitentiaries. Perhaps King Lear had the key to prevention of atherosclerosis when he cried, "Come, let's away to prison..."

It is significant that many of Hatch's coronary victims "maintained the eating habits of a robust early manhood after caloric and nutrient requirements had declined sharply."

Overweight, overnutrition, and cigarettes appear once again to be the menaces to the man with the vulnerable genetic constitution. Dietary fats and sugars are in particular disrepute but reassuringly, at least to this writer, Hatch's report says "a simple pathogenesis for atherosclerosis and myocardial infarction—such as the consumption of too much fat, or cholesterol, or sugar—will not be found."

Research of this type, and prospective studies, such as those at Framingham and Albany, reviewed recently by Doyle (Mod Conc Cardiov Dis, April 1966), will undoubtedly help us to recognize the pattern of susceptibility to overt ischemic cardiac disease. But how many metabolic stress tests are necessary before their additive value results in a decision that the individual is seriously threatened with coronary thrombosis at some future time? In this study over a dozen laboratory determinations were made in each case. But one may wonder when in the lifetime of the individual such testing should begin. The attempt to define the archetype of abnormality has a notable history in many fields. Lombroso believed it possible to describe the specific criminal type, which was "midway between the lunatic and the savage." We can recall the delineation of special character types produced by superimposing a series of photographs of examples of the type and making a composite print of the stack of negatives.

The trouble with Lombroso is that the non-criminal controls, like many other normal folk, may well have had latent criminal tendencies, and composite photographs are disturbingly fuzzy around the edges, just as is the pattern of the suspected coronary victim.

It may be that there is a specific test for atherophilia hidden in the fastnesses of enzymology. This one might call the "Damocles test." Damocles was a sycophant at the court of Dionysius the Elder at Syracuse. Having had his good fortune as a ruler extravagantly praised by Damocles, Dionysius invited him to share the felicity he envied by attending a banquet where he was seated under a sword suspended by a single hair above his head. Damocles dared not stir in his seat to enjoy the rich feast. It is appropriate to the study of atherosclerosis that this danger was presented at a banquet.

The Damocles test, if positive early in life, would mark the boy baby as one over whose head would hang this scimitar of coronary disease, and all the agencies of preventive medicine could be marshalled to protect him.

However, it seems about time that less effort be expended on convincing the amazingly durable, omnivorous animal, man, that his eons of dietary experience have brought him to such a sorry pass, and that he must raise his children to avoid the enjoyable foods of prosperity and to be sacrificed over a lifetime to an hypothesis. It is true that a parent might be fortified by a negative or a positive Damocles test so that, in good conscience, he could say to one boy that he could safely be a sybarite but his brother should be a Trappist monk.

Work, such as that of Hatch and his group, suggests it might just be possible that not smoking cigarettes and keeping one's weight at that of age 25 would prevent much
atheromatosis, and that this is all we need to be told.

But, after all, life insurance companies have known this for generations. Hippocrates thought weight control a good idea, and so did Celsus, almost 2,000 years ago.

It has been shown that the almost inevitable fate of the American male is to gain weight during middle age. Reversal of this pattern would probably prolong many lives. Unfortunately, for a compelling motivation, the short life has for too long been equated with a merry one.

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Habilitiation of the Atherosclerotic

Naturally people, not wishing to give in to aging and to become invalids, continue their work in spite of stenocardia, hypertension, infarctions, etc. Apparently scientifically substantiated recommendations are needed for patients with atherosclerosis for employment of their residual capacity to work in order that people usually made wiser by great life experience and frequently too with special training in the various spheres of knowledge, artcraft, etc., may continue to fulfill functions useful to society and the state.

Medicine undertakes the prolongation of man's life, but this extended life should be active, functional, and creative.—ALEKSANDR LEONIDOVICH MIASNIKOV: *Atherosclerosis*. Translation sponsored and distributed by National Heart Institute. Public Health Service Publication No. 926, p. 484, 1962. (Dr. Miasnikov died November 17, 1965.)
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