

Tipsy Mice May Yield Clue to Heart Disorder

A collection of alcoholic mice at the University of Southern California may give medical scientists new understanding of the possible role of stress in the degeneration of heart and kidney tissue.

With the aid of a \$2,840 grant from the Los Angeles County Heart Assn., George A. Santisteban, Ph.D., assistant professor of physiology, is trying to find out more about some complex chemical pathways that may lead some people to develop heart muscle damage.

Dr. Santisteban injects mice with an equivalent of what, in human terms, would be a pint of 100 proof whiskey. Follow-

ing the injection the adrenal glands are taken out. Under these circumstances Dr. Santisteban has found that the alcoholic stress produces not only gleeful behaviour, followed by sleep and, presumably, a monumental hangover, but also grossly observable changes in the heart and kidney.

THIS PHENOMENON was first noted by Hans Selye, the famed Canadian stress physiologist. Dr. Selye reported experiments that showed that stress leads to an excessive excretion of hormones from the adrenal cortex into the blood stream. If an experimental

animal was stressed, and at the same time fed a high salt diet, damage to the heart muscle usually took place.

Dr. Selye concluded that a combination of excessive sodium and excessive corticoid hormones was particularly dangerous to the heart and kidneys.

Continuing in the general direction which Dr. Selye's experiments seem to lead, Dr. Santisteban is exploring the possibility of a vicious circle being set up by alcohol-induced stress.

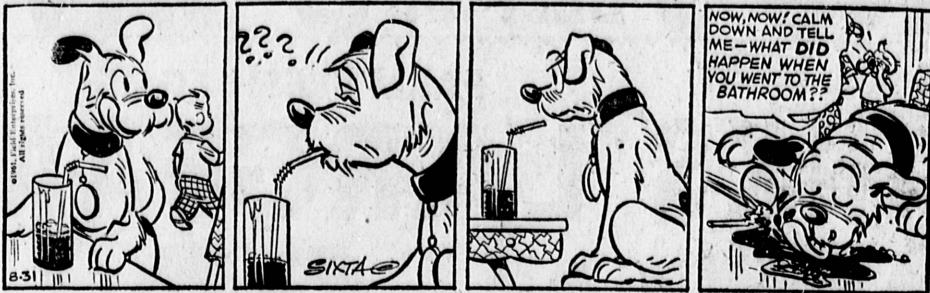
ALCOHOL, AS a stress agent, leads to an excessive output of corticoid hormones.

But alcohol is also believed to inhibit the function of the posterior pituitary gland, and this inhibition causes a greater concentration of salt in the tissues of the body due to excessive water loss. Hence alcohol, by two different pathways, may create excesses in the body which Dr. Selye points out as dangerous.

Although Dr. Santisteban's research is basic physiology far removed as yet from human patients, finding from such a research project could have far-reaching implications to research on the causes of weakened heart muscle, which produces congestive heart failure and dropsy.

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