at a time, giving the enemy no chance to rest, eat or sleep, forced the Germans into a worse state of exhaustion than our fresh troops were in. Thousands of Germans were captured who were too tired to offer any resistance, and many of them died of exhaustion resulting from excessive fatigue or from infections to which fatigue predisposes.

It was a part of the plan of the Allied Armies to keep the Germans in a state of fatigue, thus lowering their morale; hence the attacks on all parts of the front were carried on, day after day, and night after night. There is no doubt but this plan of campaign ended the war months and perhaps years sooner than would have slower tactics, and had the enemy had time to recuperate and bring up reserves between battles.

CHRONIC FATIGUE

If a man loses a small amount of blood each day for months at a time he becomes anemic, and as a result he becomes weak and nervous, incapable of performing much mental or physical labor; and if the hemorrhages continue, the patient either becomes a chronic invalid or dies. In hookworm disease, also known as "lazy disease," the hundreds or thousands of worms that are sometimes found in such cases cause minute hemorrhages from the mucous membrane of the intestines. The total does not amount to enough for the victim to know that he is losing blood, yet he gets pale, loses his energy and becomes incapable of earning a living; and in the case of children their growth and development is retarded.

The slow poisoning in chronic fatigue that comes from overwork, day after day, and year after year, produces much the same condition as the daily loss of blood over a long period of time. It is certainly true that tens of thousands of Americans are inefficient and ill from chronic fatigue; and every observant physician has seen many good men and women die as the result of years of overwork.

If one works long hours,, or if he goes too hard while he is working, either mentally or physically, he can accomplish more that day than is normal for him, but the next day he unconsciously slows down and it may take two or three days for him to get back to his normal level of efficiency. It is an example of the law of compensation which holds throughout nature that a period of stimulation, or over-activity, is followed by a corresponding period of depression, but the descending movement is lower and lasts longer.

The American people, of whom it has been said: they "know how to work, but do not know how to play," should learn from the sudden breakdown of President Wilson, and from war experience, of the dangers of excessive fatigue.

MINERAL POISONS AS IMPURITIES IN FOOD

Poisoning from accidental chemical impurities in food was formerly thought to be frequent, but bacteriological studies in many outbreaks of food poisoning have proved that they were due to infections; and it is now believed that acute poisoning from chemicals, whether organic or mineral substances, in food, is extremely rare. It may, however, occur in cases of gross carelessness in handling and preparing foods which are liable to contamination by various organic and mineral substances.

It is true that many foods may contain small quantities of chemical substances which, while not enough to cause acute toxic symptoms, may, by their cumulative action, produce symptoms of chronic poisoning. It has been suggested that one of the causes for the increase in the degenerative diseases (chronic cardio-vascular-renal diseases), is the daily use for

years of foods containing accidental impurities of various kinds. This is a theory that can not be verified by experiment, but it is certainly safest to be informed regarding the chemicals that are used as food preservatives or adulterants, and those which may occur as accidental impurities in many articles used in our daily diet.

Various organic and mineral poisons may form accidental impurities in food. They usually occur in the manufacture of cheap food preservatives or food substitutes, or find their way into food through gross carelessness on the part of those handling it. These chemicals, when accidentally introduced into the stomach in food, cause the characteristic symptoms of the particular mineral poison in question.

ARSENIC AND GLUCOSE

Arsenic is one of the most important chemical impurities which may poison food. Arsenic is an impurity in iron pirites, employed in the manufacture of sulphuric acid, which is constantly used in the production of glucose.

Glucose is one of the most largely used food adulterants, being sweeter and cheaper than sugar. It is one of the important ingredients in candies, syrups, preserves and other sweets that are sold on the market. Since these foods are used so largely by children, it is important that they contain no impurities that can be harmful. Arsenic is frequently found in glucose that has been made of cheap and impure sulphuric acid.

Glucose is also used in the manufacture of beer and likewise, no doubt, in the production of the cheap beer substitutes now on the market. It would seem advisable to investigate carefully the industries that manufacture glucose, and those in which it is employed in making foods and drinks for human consumption. There is no way of investigating the harmfulness of the daily ingestion of small quantities of arsenic, yet it can not be considered wholesome.

That there is danger in the use of glucose containing arsenic as an impurity is evidenced by an epidemic of "multiple neuritis" in the English Midlands, in 1900. About 6,000 persons were affected and there were about seventy deaths. The source of this outbreak of chronic arsenical poisoning was traced to arsenic in beer, in the brewing of which cheap sugar, containing arsenic as an impurity, was used.

LEAD, COPPER AND TIN

Lead-poisoning is said to be due more to the ingestion of food that is handled by painters in eating than to the absorption of it through the skin. Lead-poisoning has also been known to occur from the continued use of beverages sold in bottles with lead stoppers. This, however, must be a very infrequent source of lead-poisoning. Enormous quantities of chocolate candies, that were wrapped in foil, were consumed by the American soldiers in France, but no case of lead-poisoning was reported.

Lead chromate was formerly used in coloring candies yellow. It is a practice that should be discouraged, for undoubtedly if lead chromate is used very much chronic lead-poisoning will result.

The lead used in soldering canned foods has been under suspicion, but there is probably not the slightest chance of chronic lead intoxication from this source. It is possible that the constant use of drinking water that has passed through lead pipes is a source of danger. Lead pipes, therefore, should not be used in the plumbing of fixtures or on hydrants from which drinking water is procured.

Copper compounds have been held for many years to be among the chemical poisons which may contaminate food. Verdi-

gris, or copper acetate, a poison said to be formed in copper cooking utensils in which food is allowed to stand too long, was feared by every educated housewife a few decades ago. It is now believed that the cases of poisoning formerly attributed to verdigris were really food infections.

Copper sulphate, said to be used by the French and other European manufacturers to reproduce the green color of peas, beans, and other green vegetables, is a highly poisonous compound. It is claimed by the manufacturers that they do not use the copper sulphate, but other salts of copper which are not so poisonous. It should be said to the credit of American canners that they do not use copper salts for coloring peas or any green vegetables, and the United States Government has prohibited the importation of peas, etc., that have been colored with copper salts.

Tin was under suspicion for a long time as a source of poison in canned foods. Traces of tin are frequently found in canned foods, but there is no evidence to prove that it is the cause of acute food-poisoning, and nothing is known of any cumulative action of tin. However, tin or any other mineral, as an impurity of food, can not be regarded as wholesome. If, upon opening a can of food, the tin appears corroded, it is likely that its contents have dissolved some of the salts of tin. For the same reason food in old and rusted cans should not be used unless one is absolutely sure that it is pure and wholesome.

MARRIAGE LAWS AND EUGENICS

Does the average layman understand the real intent and purposes of the constructive legislation regulating the marriage of the "unfit" or diseased person? Is it that the scope of their comprehension limits the thought merely to gonorrhea and syphilis? In truth, do the laws that have been enacted by several states strive for eugenic marriages, or are these special laws a mere weapon in the hands of the venereal disease antagonist? Any step that tends to promote a high standard of the human species should be endorsed by all. In order that the reaction following the evolvement of such radical measures should be wholesome and co-operative, it seems to THE JOURNAL of prime importance to insist upon enlightenment and upon placing the basic principles of such movements upon a liberal and substantial basis.

No set of men in the whole world sees more vividly the fearful and far-reaching consequences of the union of unfits than the physician. The annals of penitentiaries, reformatories, asylums for the insane, institutions for the feeble-minded, hospitals for epileptics, homes for the blind and for the deaf mute, alms-houses, county jails and work-houses are fruitful medical investigations among the unfortunates taken from the daily walk of life. It is evident that the medical profession has been somewhat remiss in urging ways and means for protecting society against the degenerate, whether unrestrained or in an institution.

As an instance of the cost of supporting a family that may spring from a degenerate, the following is presented by Dugdale in his classic investigation, "The Jukes, A Study of Crime, Pauperism, Disease and Heredity." From the early half of the eighteenth century to the end of the nineteenth century the known descendants of Jukes numbered 1,200. The aggregate cost of this family to the State of New York was known to have been $1,308,000.

The physician views the problem of marriage as one for the propagation of the species. He realizes the immutable laws of heredity and therefore assumes that the character units of one or the other