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to indicate what they wanted from such a course. They concern:

1. The problems that parenthood brings. (Probably, it is suggested, these boys are aware of difficulties in their relations to their own parents.)
2. The problems that sex presents before marriage becomes economically possible.
3. The wise choice of a mate.
4. The husband-wife relationship and the individual adjustment necessary in

marriage if it is to be a happy one.

5. The problem of family limitation or birth control.

6. The problem of the break-down of family life and divorce.

7. Possible variations in the form of marriage, such as the companionate marriage. The latter topic, of lively interest among high school students, has only minor concern for the more practical college boys.

*Science News Letter, June 10, 1939*

PUBLIC HEALTH

## No Typhoid List Topped By Bridgeport, Conn.

NEW low records for deaths from typhoid fever in the large cities of the United States are reported by the American Medical Association for the year 1938.

The *Journal of the A. M. A.* (May 13) publishes its honor roll of cities with no typhoid deaths.

First place on the list goes to Bridgeport, Conn., with no fatality from typhoid fever in five years.

Fort Wayne, Ind., is runner-up, with no typhoid deaths for four years.

South Bend, Ind., and Utica, N. Y., have had none in three years.

Canton, Ohio; Fall River and Lynn, Mass.; Milwaukee, Wis.; New Bedford, Conn.; Reading, Pa.; Seattle and Tacoma, Wash., and Wichita, Kan., have had no deaths from the disease in two years.

Other honor roll cities with no typhoid deaths in 1938 are: Buffalo, N. Y.; Cambridge and Lowell, Mass.; Elizabeth, N. J.; Erie and Scranton, Pa.; Grand Rapids, Mich.; Kansas City, Kan.; Minneapolis, Minn.; Omaha, Neb.; Peoria, Ill.; Portland, Ore.; Providence, R. I.; Salt Lake City, Utah; San Diego, Calif., and Youngstown, Ohio.

Seven other cities are placed in first rank rather than on the honor roll because they have been charged with deaths among non-residents. These are: Toledo, Ohio; Hartford, Conn.; Syracuse, N. Y.; Worcester, Mass.; Springfield, Mass.; Evansville, Ind., and Camden, N. J.

No outbreak of epidemic proportions was recorded during 1938. Routine vaccination of the population is not practiced except under flood conditions. However, in progressive communities vaccinations are urged for contacts to cases

and for persons who travel widely in insanitary countries.

In this annual survey, the A. M. A. notes a trend in some places, particularly in the southern states, to encourage the inoculation of food handlers.

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BOTANY

## Iodine Is Apparently Necessary For Plants

IODINE may prove to be as necessary for plant health and growth as it is for that of humans, Prof. W. L. Powers of Oregon State College suggests, (*Science*, May 12) in the preliminary report of ten years of experiments with plant species ranging all the way from spinach to bacteria.

The plants were grown in soil-less cultures, with nutrient solutions constantly flowing around their roots. The amounts of iodine found necessary were very minute: one part of iodine in from two to four million parts of water was sufficient.

Iodine seems to be in some way necessary for chlorophyll formation, and reaches particularly high concentration in spinach and head lettuce. Yet lower plants without chlorophyll, including yeasts and the nitrogen-fixing root-nodule bacteria, also thrive better on iodine-containing media.

Prof. Powers points out that one of the values in using seaweed as a fertilizer, a common practice along all sea-coasts, may be in the iodine thereby added to the soil. He suggests also that putting potassium iodide into irrigation water may eventually become standard horticultural procedure.

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