

## Good Teeth—For You, Your Child Your Community

By ERNEST A. BRANCH, D.D.S.

The Council on Dental Health of North Carolina Dental Society is sponsoring this series of articles on Dental Health. The writer, Dr. Ernest A. Branch is the Director of the Division of Oral Hygiene of the North Carolina State Board of Health.

### Fluorides and Teeth

In the current interest and concern about fluoridation, the addition of fluorides to municipal water supplies, we should not forget the dramatic history of the discoveries and developments on which this preventive measure is based.

This particular story begins almost fifty years ago with the desire and determination of a young dentist to do something about a condition that was disfiguring the teeth of his patients. In 1908 Dr. Frederick S. McKay and his colleagues in Colorado Springs set themselves the task of finding the cause and cure of the "Brown Stain" occurring in the teeth of 80 per cent of the children and young adults of their town. In examining the teeth and talking to the children they noted that the teeth of those who had moved into the community after the age of ten were not affected.

Dr. McKay extended his investigations to the surrounding countryside and small communities, traveling by horse and buggy and asking the people what they ate and where they got their water. He found many other similarly afflicted communities but he also found one community that did not have "Colorado Brown Stain." Of great significance was the fact that this was the only one of these towns that did not get its water from the Pike's Peak watershed. Later, in a mining community, the condition was found to be extremely serious. This town used water from a deep mine.

Dr. McKay had called in Dr. G. V. Black to help in the investigations. It gradually became apparent to them from their own studies and from reports received from others who had become interested that the condition was related to the water supply. Dr. Black gave the name, mottled enamel, to the condition. The first article on mottled enamel in dental literature was published in 1916 in "Dental Cosmos" under the joint authorship of Dr. McKay and Dr. Black.

Conclusive evidence of the validity of the water hypothesis was furnished between 1916 and 1931 by experiences with changing water supplies in several communities. Britton, South Dakota, changed from shallow, surface wells to deep drilled wells with the result that all of the young children had mottled tooth enamel while the teeth of the older children were not affected. After a similar experience in Oakley, Idaho, where the water source was changed from surface wells to water piped from warm springs, a second change was made and the mottling was ended.

At Bauxite, Arkansas, with the establishment of a deep well system mottling appeared. The wells were sealed off and water from the Saline River was used. Ten years later Dr. McKay and Dr. H. Trendley Dean of the United States Public Health Service examined the children's teeth and

found the teeth of those born since the change from the well to river water free of mottling. They also noted, however, that the teeth of these children were more subject to decay than were the mottled teeth. This new and important observation led to a new field of investigation.

The study at Bauxite also led to finding that it was the high fluorine content of water that caused mottled enamel. This discovery was made by H. V. Churchill, chief chemist of the Aluminum Company of America, and was announced by him January 20, 1931. He found the fluoride content of the deep well at Bauxite to be 14 parts per million and was the first to suggest the possible correlation between fluorides in the water and mottled enamel. Waters from other affected communities were analyzed and found to contain fluorine.

Dentists and chemists then became engrossed and engaged in studies and experiments to determine the amount of fluorine which would inhibit decay without causing mottled enamel and in devising methods for regulating the fluorine content of drinking water. As late as 1935 there was more emphasis on reducing the fluorine content of water to prevent dental fluorosis than there was on adding fluorides to municipal water supplies to prevent dental caries.

In our own State in the early thirties, Dr. Dean and the writer visited communities where the children's teeth showed mottling. In Windsor, where the condition was prevalent in a mild form, the artesian well water was found to contain excessive amounts of fluorine. These wells were sealed off and a new source of water substituted.

In brief, then, the first three steps in discovering the relationship of fluorides in drinking water to dental health have been:

1. The association of the prevalence of mottled enamel with the water ingested during the period of tooth formation.
2. The isolation of fluorine as the constituent of water that causes mottled enamel.
3. The observation that mild dental fluorosis was accompanied by low dental caries prevalence.

In our next article we will discuss some of the studies and experiments leading to the acceptance of fluoridated water as a means of reducing the incidence of tooth decay.

### CHRISTIAN CHURCH SERVICES

Services at the First Christian Church have been announced as follows by the pastor, the Rev. E. C. Alexander:

Bible School, Sunday morning at 10 o'clock; morning service at 11 o'clock; evening service at 7:30 o'clock. Wednesday Evening Bible Class meets at 7:30 o'clock. Everyone is welcome to young people's meeting at 6:30 P. M. all services.

### Vets' Question Box

Q—The VA has just awarded me disability compensation for an ailment I incurred in service. Can I count on receiving compensation checks, for the same amount, each month for the rest of my life?

A—Not necessarily. Your compensation payments may be subject to change, depending on your physical condition. If medical evidence shows your disability is improved, payments may be reduced or even stopped; or, if it shows the disability is worse, payments may be increased.

Q—I'm a teacher and a World War II veteran. I've been spending my summers going to school under the GI Bill. This coming summer I wonder if I could take a course to get credits I need in order to renew my teaching certificate.

A—No, you could not. Summertime GI training by teachers may not be taken just to renew a certificate or keep it in force. But it may be taken if it will lead to a higher or more advanced certificate than the one you now have.

### CHRISTMAS HINTS FOR GIFTS, RECIPES

Particularly now you'll welcome timely hints on last-minute gifts for young girls as well as tempting recipes for your Christmas cakes. See these helpful articles in December 20th issue of

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### State Patrolmen Arrest 15,207 During October

Heading the October report of the State Highway Patrol were 15,207 arrests. In addition troopers reported they inspected 87,409 vehicles, issued 8,352 warning tickets, investigated 8,294 complaints, weighed 635 vehicles,

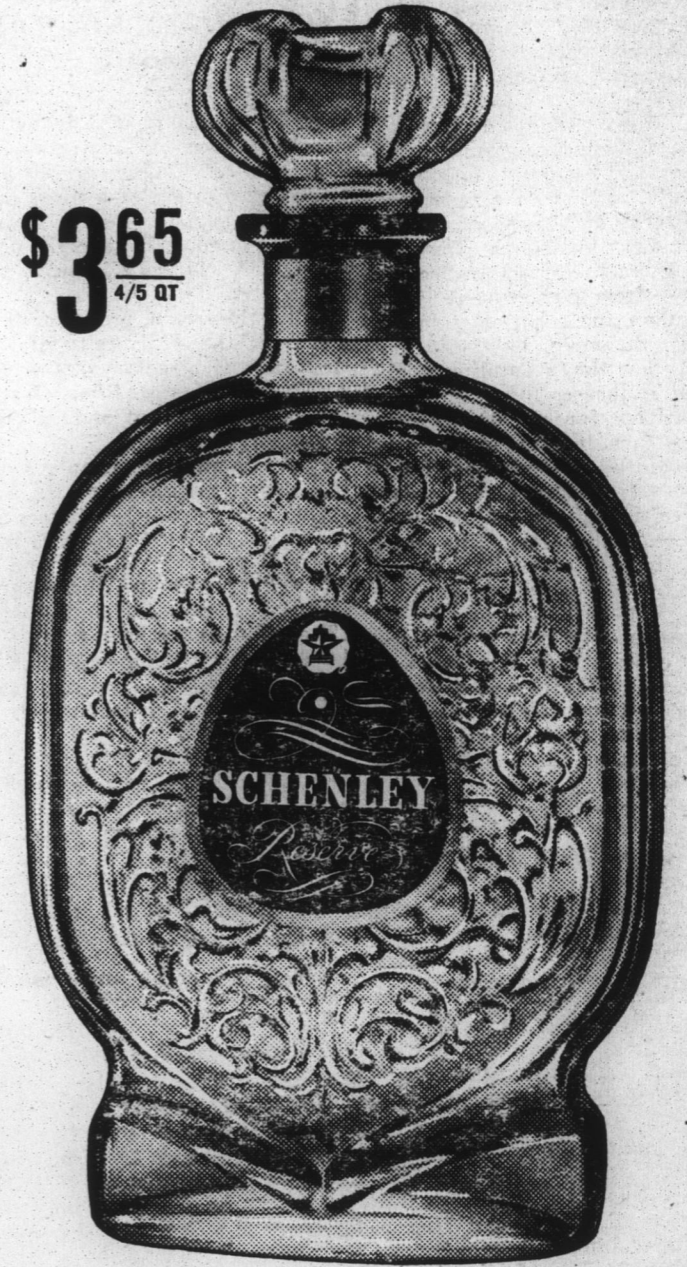
and inspected 151,592 operators' licenses.

They investigated 2,227 accidents in which 89 were killed and 830 injured. To carry out their duties patrolmen traveled 2,072,036 miles during October and used 126,000 gallons of gasoline.

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## SCHENLEY

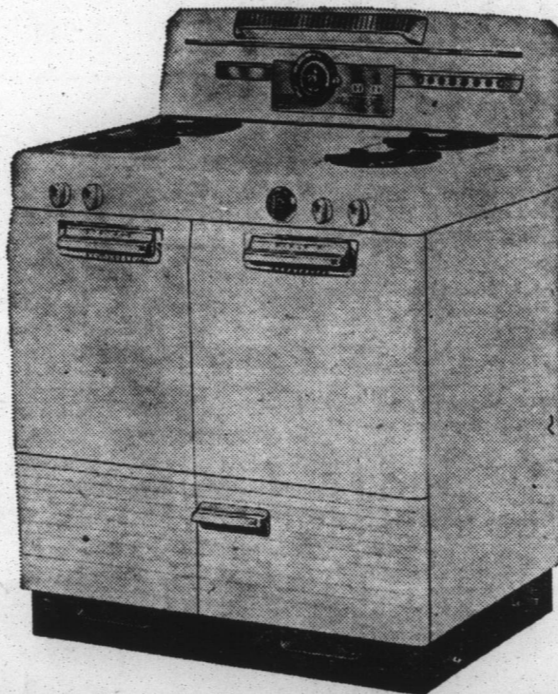
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