



### Silt and Salmon

**S**ILT washed down from placer gold mining operations is declared not guilty of killing salmon in the Rogue River, famous fishing stream of Oregon, by Dr. Henry Baldwin Ward, emeritus professor of zoology at the University of Illinois, who made a special study of the situation for the Oregon State Department of Geology and Mineral Resources. Dr. Ward's results have been published in a special bulletin.

Resumption of placer gold mining in Oregon after the industry had been dormant for a number of years made the question a live issue between the mining interests and the conservation, sporting and fisheries people. In placer mining, the gold-bearing gravels are washed out of hillsides by powerful jets of water, and the waste material is poured into the river, making it very roily and turbid. It was feared that fish could not thrive in the muddy water.

Dr. Ward approached the problem rather inclined to accept this point of view, he informed Science Service. However, his observations convinced him that the muddiness was doing the salmon no particular harm.

Placer mining waste, Dr. Ward points out, is not the same as pollution. It does not add any toxic substance to the water, and it does not introduce organic materials that adsorb oxygen from the water and so cause the fish to suffocate. It consists of the same soil materials that are introduced into the stream by natural erosion processes, producing conditions of turbidity in the water to which they have been accustomed for ages. The only differences are in quantity and season.

The red-colored sediment in the Rogue River may even serve as a protection to the salmon, Dr. Ward suggests. "It may contribute to the opacity of the water,"

he says, "and perhaps also makes it difficult for the fish to see the fly. . . . If the fish cannot see or are not attracted by the caster's lures, the condition of the water may reasonably be said to protect the fish, even though it disappoints the fisherman!"

Additional support for Dr. Ward's views is found in results of laboratory experiments at Reed College, performed at his suggestion by Dr. L. E. Griffin, who kept fingerling salmon and trout in tanks of muddy water. It was found that they got on just as well, on the whole, as control groups kept in clear water.

Other things, however, that are being done and proposed for this river will not be so harmless to the salmon population, in Dr. Ward's opinion. Diversion ditches, drawing off water for irrigation and industrial uses, tempt the fish out of the main stream, to perish miserably in the fields or be cut to pieces in turbines. Sewage and organic wastes from mills and factories greedily absorb the dissolved oxygen from the water and the fish suffocate.

Particularly evil, Dr. Ward holds, are the effects of dams. Salmon insist on ascending to the headwaters of streams to spawn, and although fish ladders are usually built so that they may pass the dams the fish do not always use them. They seek the coldest flowing water, and if this comes from the tailrace of the turbines or through leaks in the dam, they will forsake the ladders and spend their vitality in vain attempts to ascend by these impossible routes.

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#### PSYCHOLOGY

### Our Love for Music Is Explained by Psychologist

**L**OVE for music can be explained by the psychologist. Dr. Carl E. Seashore of the University of Iowa, who as psychologist has for years been studying and predicting musical ability and appreciation, scouts the idea that love for music is an inexplicable emotion.

Love of music can be accounted for on five grounds, he writes, in the *Music Educators Journal*.

The first reason is physiological. We have an organism that registers music and responds to it somewhat like a resonator. Not only the central nervous system is affected, but the peripheral nervous system, all the muscles, all the internal organs, and especially the autonomic system with its endocrines which furnishes a physical basis for emotion. The whole body is put into a glow of

well-being by the pleasure of hearing musical sounds.

A single sound may be beautiful in itself, like a flower or a human face, Dr. Seashore emphasizes. The untutored mind and the musically trained can alike delight in their charm quite apart from their utility in musical structure.

Delight in "harmonic structure, the melodic progressions, the rhythmic patterns, the qualitative modulations, in the flow of beautiful sounds" is another reason for love of music.

We love music also because it is the language of social bonds. Music is a message and can move the social group into concerted action and into a feeling of common fellowship.

Finally we love music because it is a means of self-expression. It furnishes us with the joy of putting into a fitting medium our love, our fears, our sympathy, our feelings of fellowship, our communion with the Divine.

On these five fundamental grounds, says Dr. Seashore, rests the psychologist's adequate explanation for love of music.

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#### PHYSIOLOGY

### Girls Have More Toothache; Get Their Teeth Earlier

**G**IRLS have more toothache, probably, and certainly more decay, fillings and missing teeth than boys of the same age. But it is not the girls' fault. They just get their teeth earlier than boys, so they have a longer exposure to caries, scientific term for tooth decay.

The girls are not any more susceptible to caries, Drs. Henry Klein and Carroll E. Palmer, U. S. Public Health Service, conclude after surveying the tooth situation among nearly 5,000 boys and girls in the elementary schools of Hagerstown, Md.

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by Dr. E. F. Northrup

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