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of
Idaho-Born Freshmen
at
The University of Idaho

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UNIVERSITY OF IDAHO
AGRICULTURAL EXPERIMENT STATION
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DECAYED, MISSING, AND FILLED TEETH of IDAHO-BORN FRESHMEN AT THE UNIVERSITY OF IDAHO*

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The state of Idaho has great variations in many factors which are believed to have an effect on health: latitude, altitude, climate, hours of sunshine, soil conditions, and mineral and fluoride content of water supplies. Idaho is in a particularly good position, therefore, to study the effect of environment on dental health. Freshman students at the University of Idaho who were born and reared in Idaho were given dental examinations in the spring and fall of 1950. A total of 304 students were examined. The distribution of the 265 who had been continuous residents of one locality is shown in Fig. 1. All parts of the state are represented, although there are few from the southeastern corner because of the small number of freshmen who attend the University from that area. The students examined ranged in age from 17 to 20, two-thirds being 18 years old. Fifty-five percent were males.

The students examined in the Idaho study averaged 10.4 decayed, missing, or filled teeth per person. Freshmen students examined at Oregon State College in 1947, in a similar study¹ averaged 13.6 DMF (decayed, missing, or filled) teeth. Freshmen students from Utah examined at Utah State Agricultural College in 1948² and 1949³ averaged 14.5 DMF teeth, whereas freshman students reared in Idaho examined in the same study averaged 11.7. Thirteen students (4.3 percent of the total) examined at Idaho and 4 percent of the Idaho students at Utah State Agricultural

* This investigation was financed from funds allocated to the state under the Research and Marketing Act of 1946.

1 Hadjimarkos, D. M., Storvick, C. A., and Sullivan, J. H.: "Dental Caries Experience Among Selected Population Groups in the State of Oregon." *Station Technical Bulletin* 19, 1950.

2 Wilcox, E. B., Walker, F. D., and Greenwood, D. A.: "Utah Born Students Have More Decayed, Filled, and Missing Teeth than Out-of-State Students." *Farm and Home Science*, Vol. X, p. 15, 1949.

3 Wilcox, E. B., Personal Communication.

DMF TEETH OF IDAHO-BORN FRESHMEN

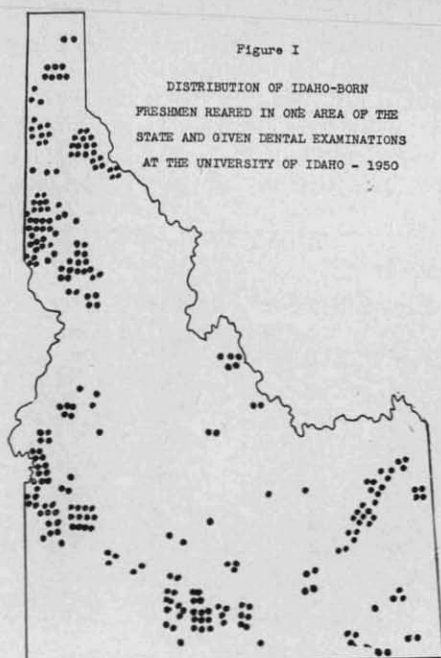
College were found to be free of tooth decay, while only 0.7 percent of the Oregon and Utah students were caries free.

The women students had a higher number of DMF teeth than the men in this study, as was also observed in Utah and Oregon. The Idaho women averaged 11.8 DMF teeth and the men 9.8 DMF teeth. Although the women had higher DMF values than the men, they had fewer cavities requiring filling, averaging slightly over three unfilled cavities compared with an average of four for the men.

Fig. 2 shows the home locality of students who had been continuous residents of one area and who had teeth with high and low incidence of caries (decay). The first map shows the distribution of the 64 whose teeth had a low rate of caries attack—no more than six decayed, missing, or filled teeth. The second map shows the distribution of the 67 who had a higher DMF teeth rate than would be expected for their age-range in most parts of the country—15 or more DMF teeth. Most of the students having a low incidence of caries were from the Boise-Payette and the Southern Snake river areas; the majority of the students with a high incidence of caries were from the northern part of the state.

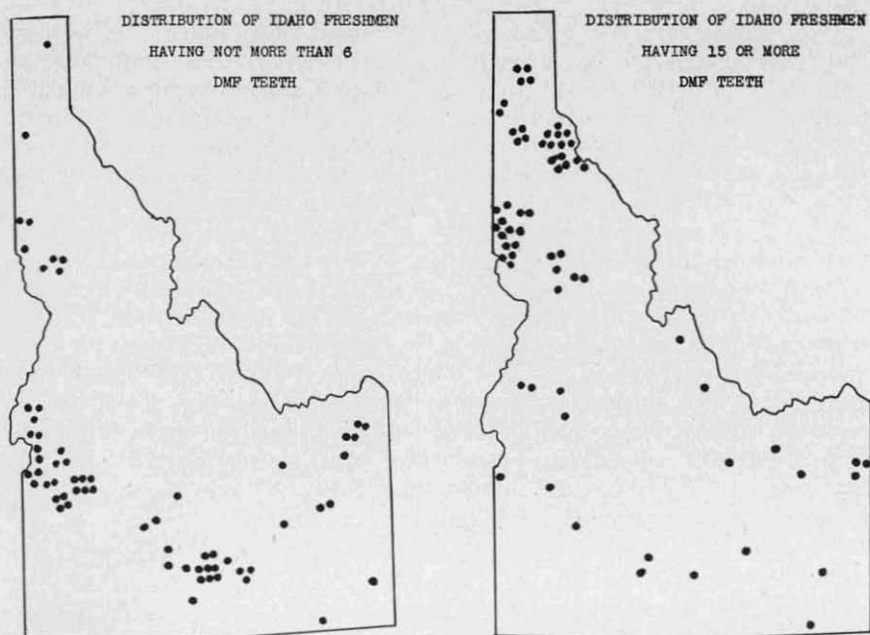
To determine the variation in caries experience of students from different geographical areas of the state, the state was arbitrarily divided into seven areas (Fig. 3): Panhandle, Clearwater, Mountains, Boise-Payette, Southern Snake, Upper Snake, and Southeast.

The area within each of these divisions is relatively homogeneous as to water supply, climate, principal industries, and types of agriculture. The average number of decayed, missing, and filled teeth and tooth surfaces of the students who had been continuous residents of each area are shown in Table 1. The difference between the average DMF rates of students from the Boise-Payette area and the Panhandle is striking — the average of those from the Panhandle was 15.2 DMF teeth and 35.4 DMF surfaces, while those from the Boise-Payette area averaged 6.6 DMF teeth and 11.8 DMF surfaces.



IDAHO AGRICULTURAL EXPERIMENT STATION

Figure II



It is of interest to compare the results of the present study with data from the Women's Physical Education Department records of freshmen women students for 8 different years within the period 1923 to 1937. The teeth were checked as part of the medical examination, the same two doctors making the examinations during the entire period. On most of the records the blank for Teeth was

TABLE I

Dental Caries Experience of Freshmen Students at the University of Idaho Who Had Been Continuous Residents in a Particular Area of Idaho

Area	Number Examined	DMF Teeth	DMF Surfaces
Panhandle	44	15.2	35.4
Clearwater	58	13.2	27.7
Mountains	29	12.6	27.0
Boise-Payette	45	6.6	11.8
Southern Snake	42	7.9	14.6
Upper Snake	32	8.9	14.5
Southeast	13	10.8	20.1
All Students	304	10.4	21.4

DMF TEETH OF IDAHO-BORN FRESHMEN

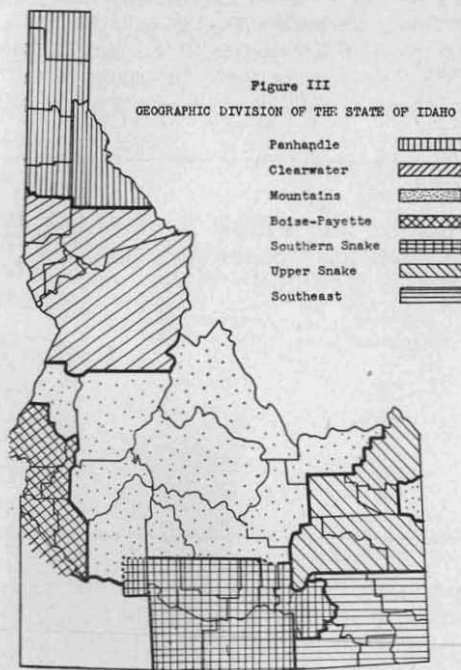
merely checked or marked "OK"; some were marked "good" or "perfect"; a smaller number were marked "bad", or even "lower

dentures". The 1324 records were assigned to their respective areas of the state, and the percentages of "good" and "bad" teeth calculated from the total number of students examined from each area. The Boise-Payette area had the highest percentage of "good" classifications, while the Panhandle had the highest percentage of "poor".

From the information on the General Information sheets, the students examined in the present study were classified as rural or urban. A number did not fit into either group, because they had moved or because they spent the school year in town and the summers on a farm. The 122 rural students averaged 9.4 DMF teeth; the 121 urban students averaged 11.8. This difference was not due to the fact that most

of the students from the Panhandle area with their high DMF rates were urban; the difference was found throughout the state: Panhandle, rural 13.1 DMF teeth, urban 15.1; Boise-Payette, rural 5.3; urban 7.5.

The community water supplies in different parts of Idaho vary greatly in fluoride content, as reported by the Division of Laboratories of the Idaho Department of Public Health.⁴ The high fluoride concentrations are found in the Snake River Valley; the Panhandle, Southeast and Mountain areas are practically fluoride free. Towns were grouped according to the fluoride content of the municipal water supplies and the average DMF tooth rate of students who had been continuous residents in the towns was calculated. Table 2 shows the decreasing DMF rate with the increasing fluoride content of the water supply. In interpreting these results, it should be remembered that the towns which have the higher concentration of fluorides in the water are in agricultural areas with pre-



⁴ State of Idaho, Department of Public Health, Division of Laboratories: "A Computation of Chemical Analysis of Community Water Supplies," 1946.

