DENTAL CARIES IN IRELAND

REPORT ON
THE DENTAL CARIES SURVEY
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NUTRITION COMMITTEE

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Professor W. J. E. Jessop, M.D., M.Sc., F.R.C.P.I.,
ACKNOWLEDGMENTS

The Dental Caries Survey was undertaken by the Medical Research Council of Ireland at the request of the then Minister for Health, Dr. James Ryan, T.D., and the Council wishes to acknowledge a special grant from the Hospitals' Trust Fund towards the cost of the Survey.

The Council also wishes to acknowledge its indebtedness to the following:

Dr. E. R. Bransby, Dr. H. E. Magee and Miss J. R. Forrest of the Ministry of Health, London, for advice in planning the Survey;

The Central Statistics Office, Dublin, for selecting the samples and for all the statistical work in connection with the Survey;

The Department of Education, the School Managers and School Teachers who made it possible for the work to be done in the Schools;

The County Managers and Medical Officers of Health of Galway and Tipperary (N.R.) for their co-operation in making available the services of the Dental Officers.
REPORT ON THE DENTAL CARIES SURVEY

INTRODUCTION

The purpose of this Survey was to ascertain whether there were significant differences in dental condition amongst school children living in different areas of the country and whether such differences, if they existed, could be related to differences in the dietary intake of the children.

Differences in the dental condition of different groups of school children in the Channel Islands had been noted by Knowles (1946) and by Bransby and Knowles (1949), who concluded that these depended on basic differences of dietary intake amongst the different groups of children.

The Reports on the Irish National Nutrition Survey, issued between 1949 and 1953, gave a comprehensive picture of dietary habits in this country, and revealed differences in the levels of food intake between the various areas investigated. The work in the Channel Islands had seemed to show that during occupation and severe rationing, the teeth of resident children were in better condition than those of children who were evacuated to England and who were receiving a more varied and usual diet. It was, therefore, decided to carry out an investigation amongst school children in Ireland to determine the extent of dental caries, and whether significant differences in dental condition were to be found between the four areas in the country for which relevant dietary data were available from the Report of the National Nutrition Survey.

The present Survey was planned by the Nutrition Committee of the Medical Research Council of Ireland, in consultation with Doctors H. E. Magee and E. R. Bransby of the Ministry of Health, London.

With the co-operation of the County Managers and of the County Medical Officers of Galway and Tipperary (North Riding) the School Dental Officers of these counties—Miss L. Cunniffé, B.D.S., and Miss M. C. Cox, B.D.S., respectively—were seconded to take part in the investigation. In order to ensure that the result would be comparable with those of similar surveys carried out in England, these dentists spent a period of two weeks in London, where Miss J. R. Forrest, of the Ministry of Health, demonstrated to them the basis on which cavities were classified by her and her colleagues, so that they became familiar with the procedure.

When the Dental Caries Survey was being planned it was decided to obtain, for about one-tenth of the children in the Survey, additional information relating to the actual diet of the children in different periods of their childhood, and of their mothers during pregnancy and lactation, as well as data relating to social, economic and hereditary factors in the families concerned. It was thought that it might be possible to relate differences in dental condition to some of these, which, in the Appendix to this Report, have been termed "ancillary factors."
SELECTION OF SAMPLE

The size of the sample was limited for administrative reasons to about 2,000 school children, divided into the three age-groups, between 5 and 6 years, between 7 and 8 years, and between 12 and 13 years. The areas to be covered were those used for the National Nutrition Survey, and it was decided to divide the sample number into four approximately equal parts, one for each area, subject, however, to the general provision that rather more than one-quarter of the total was to be selected in Rural Areas on account of the proportionately larger population in these areas. The targets for the four areas were: Dublin County Borough—500; Other Town Areas—500; Rural Areas—600; Congested Districts—400.

A number of towns throughout the country was selected. Schools in these towns were chosen for the Town Areas sample, and within a limited radius of these towns, for the Rural Areas sample. In Dublin it was decided to select three schools in each of the Slum, Artisan and Middle-class Areas used in the National Nutrition Survey. For the remainder of the country it was considered that twenty to thirty children should be examined in each school, and, accordingly, the following number of schools was selected: Town Areas—20; Rural Areas—25; Congested Districts—20.

Thirteen of the twenty-six counties were chosen and towns with a population of 1,500 and over were selected in each province, as follows:

<table>
<thead>
<tr>
<th>Province</th>
<th>Number of Towns</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Town Sample</td>
</tr>
<tr>
<td>Leinster</td>
<td>8</td>
</tr>
<tr>
<td>Munster</td>
<td>9</td>
</tr>
<tr>
<td>Connacht</td>
<td>2</td>
</tr>
<tr>
<td>Ulster (part of)</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
</tr>
</tbody>
</table>

The numbers of children selected for examination were roughly proportional to the town population of each province (excluding Dublin County Borough) for the Town Areas sample, and proportional to the rural population of each province for the Rural Areas sample.

For the Town sample, one school was selected at random in each town, and for the Rural sample, one school was selected at random between two concentric circles of three and ten miles radius, centred in the town. In the Congested Districts schools were selected at random in each of the Counties Mayo, Galway, Kerry, Donegal and Leitrim, in the same areas as had been used in the National Nutrition Survey. In order that the number of children examined in each age-group would be about the same, it was necessary to select a second school in certain instances where all three age-groups and both sexes were not present to the required number in
the first school. In each school, children were selected at random by allocating a sampling fraction to the school, the fraction varying with the number on the rolls.

**DENTAL EXAMINATION**

The dentists were supplied with the necessary portable equipment, and with charts (Figure 1) on which the results of the dental examination could be entered. The charts were designed in consultation with Dr. Bransby, and were similar to those used in such surveys elsewhere (Knowles, 1946). Sites of caries were located by careful exploration with standardised fine steel probes, according to the technique used in earlier work.

The investigation was begun in Dublin in September, 1952, and while it was in progress there, the dentists were in frequent consultation with each other to ensure that their decisions regarding classification of cavities were uniformly based. The dental examinations in all areas were completed in December, 1952.

**INFLUENCE OF SOCIAL, ECONOMIC AND OTHER FACTORS**

While the work was being planned, the suggestion was made that the Survey should be extended to include information regarding the possible significance of social and economic factors, as well as the influence of heredity, and to obtain information regarding diet more precisely related to the children examined than that already published in the general results of the National Nutrition Survey. Accordingly, it was decided that the mothers of about ten per cent. of the children examined should be interviewed for the purpose of collecting such details, and the Council was fortunate in that the Department of Health was able to second for this work Miss D. Miley, who had been one of the investigators concerned in the National Nutrition Survey. The enquiry form used by her is shown in Figure 2.

A comparison between this dietary investigation and the dietary portion of the National Nutrition Survey was impossible, because the measurement of intake of the various foods in the Nutrition Survey was precise, whereas the intake of foods recorded in the social investigation was only broadly classified into "adequate" or "inadequate," and, furthermore, the social investigation forms did not cover the same items of food as were covered by the National Nutrition Survey. A further difficulty was that the Dental Caries Survey related only to the intake of food by the children examined and their mothers, while the National Nutrition Survey covered a sample of the population of all ages.

**TREATMENT OF INFORMATION OBTAINED**

When the dentists had completed their examinations, the results, as recorded on the charts, were graded, using the grading system adopted by the Ministry of Health, London.
During the description of the treatment of the data obtained, the following terms will be used:

DMF—Decayed, missing and filled teeth.

Decayed Teeth were graded as follows:

Grade 1. Discoloration believed due to caries without destruction of enamel.

Grade 2. Pitting of enamel.

Grade 3. Deep pitting, reaching down to dentine.

Grade 4. Cavity into dentine.

Grade 5. Large cavity penetrating deeply into dentine, generally of a few years standing. Pulp involved.

Grade 6. Cavity with definite and unmistakable evidence of periapical infection. Fistula on buccal gingiva or perhaps on palatal mucosa if an upper molar is involved.

As Grades 1 and 2 cannot be estimated by a probe, only grades of caries of 3 or higher were charted. Furthermore, it had been found in surveys in England that identification of cavities even of Grade 3 might be uncertain, and hence in English work this grade is often omitted, though it is usually charted in American records. In order to ensure that the results of this Survey might be comparable with both British and American results, two sets of columns were incorporated in the tables:

(a) Those in which sites of caries of Grade 3 or more were included, and

(b) Those in which only sites of caries of Grade 4 or more were included.

Missing Teeth. Only those missing teeth were recorded that could not be accounted for as having been shed normally. In deciding which teeth came into this category, the age of normal shedding, as quoted below, was used.

Normal shedding of deciduous teeth.

<table>
<thead>
<tr>
<th>Upper</th>
<th>Lower</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. 6 to 7 years.</td>
<td>A. 5 to 6 years.</td>
</tr>
<tr>
<td>B. 7 to 8 years.</td>
<td>B. 6 to 7 years.</td>
</tr>
<tr>
<td>C. 11 to 13 years.</td>
<td>C. 11 to 13 years.</td>
</tr>
<tr>
<td>D. 10 to 12 years.</td>
<td>D. 9 to 11 years.</td>
</tr>
<tr>
<td>E. 10 to 12 years.</td>
<td>E. 9 to 11 years.</td>
</tr>
</tbody>
</table>

Filled Teeth. A tooth that was filled, and subsequently decayed, appears as a single unit in DMF count. In such cases the total DMF count will be less than the sum of the relevant individual entries in the tables.

Caries Degree. In addition to grading cavities according to the system described above, it was desirable to have a single index of the condition of the teeth that would take into account the size of cavities as well as filled teeth and teeth missing prematurely because of caries.
The DMF count does not meet this requirement. The following system for classifying the teeth according to caries degree, as suggested and used by Bransby, was adopted:

Caries Degree 1. A single Grade 3 or any number of Grades 3.
Caries Degree 2. One or more Grade 4 or fillings, involving one or two of the five surfaces of the tooth.* Any Grades 3 present in the same tooth are ignored.
Caries Degree 3. One or more Grade 4 or fillings, involving three or more surfaces of the tooth. Any Grades 3 present in the same tooth are ignored. Grade 5 or Grade 6 cavities, involving one or more surfaces. Where a root is present it counts as a Grade 5 cavity. Missing teeth are recorded in this category.

When the samples included brothers and sisters, a separate study was made of these in order to indicate the importance of factors that might operate within families in comparison with those operating between families. The results of this study, and of the information collected on social, economic and other factors were also analysed statistically and are included in the Appendix.

* See Figure 1.
### Table 1: Summary of Number of Children Examined

**Dublin County Borough and Congested Districts**

*Note:* Congested Districts are not included in Town and Rural Areas.

<table>
<thead>
<tr>
<th>Age-Group</th>
<th>Total</th>
<th>5 to 6 yrs</th>
<th>7 to 8 yrs</th>
<th>12 to 13 yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dublin County Borough</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Centre City (Slum)</td>
<td>171</td>
<td>57</td>
<td>58</td>
<td>56</td>
</tr>
<tr>
<td>Crumlin (Artisan)</td>
<td>170</td>
<td>56</td>
<td>58</td>
<td>56</td>
</tr>
<tr>
<td>Glasnevin, Drumcondra (Middle-class)</td>
<td>191</td>
<td>64</td>
<td>67</td>
<td>60</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>532</td>
<td>177</td>
<td>183</td>
<td>172</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age-Group</th>
<th>Total</th>
<th>5 to 6 yrs</th>
<th>7 to 8 yrs</th>
<th>12 to 13 yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Congested Districts</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mayo</td>
<td>121</td>
<td>39</td>
<td>46</td>
<td>36</td>
</tr>
<tr>
<td>Galway</td>
<td>113</td>
<td>26</td>
<td>36</td>
<td>51</td>
</tr>
<tr>
<td>Donegal</td>
<td>108</td>
<td>34</td>
<td>38</td>
<td>36</td>
</tr>
<tr>
<td>Kerry</td>
<td>118</td>
<td>35</td>
<td>42</td>
<td>41</td>
</tr>
<tr>
<td>Leitrim</td>
<td>40</td>
<td>8</td>
<td>20</td>
<td>12</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>500</td>
<td>142</td>
<td>182</td>
<td>176</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>County and Town</th>
<th>Total</th>
<th>5 to 6 yrs</th>
<th>7 to 8 yrs</th>
<th>12 to 13 yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TOWN</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>RURAL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**County and Town**

<table>
<thead>
<tr>
<th>Town and Rural Areas</th>
<th>Town</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Louth</strong></td>
<td>Drogheda</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>Dundalk</td>
<td>27</td>
</tr>
<tr>
<td><strong>Kildare</strong></td>
<td>Athy</td>
<td>32</td>
</tr>
<tr>
<td><strong>Westmeath</strong></td>
<td>Mullingar</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Athlone</td>
<td>31</td>
</tr>
<tr>
<td><strong>Wexford</strong></td>
<td>Enniscorthy</td>
<td>28</td>
</tr>
<tr>
<td><strong>Offaly</strong></td>
<td>Tullamore</td>
<td>27</td>
</tr>
<tr>
<td><strong>Kilkenny</strong></td>
<td>Callan</td>
<td>30</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>231</td>
</tr>
</tbody>
</table>
### TABLE 1—continued

**SUMMARY OF NUMBER OF CHILDREN EXAMINED**

**TOWN AND RURAL AREAS—continued**

<table>
<thead>
<tr>
<th>County and Town</th>
<th>TOWN</th>
<th>RURAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>5 to 6 yrs.</td>
</tr>
<tr>
<td>Cork</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fermoy</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>Bandon</td>
<td>32</td>
<td>11</td>
</tr>
<tr>
<td>Skibbereen</td>
<td>38</td>
<td>.14</td>
</tr>
<tr>
<td>Tipperary</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cashel</td>
<td>27</td>
<td>9</td>
</tr>
<tr>
<td>Nenagh</td>
<td>25</td>
<td>9</td>
</tr>
<tr>
<td>Limerick</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rathkeale</td>
<td>26</td>
<td>8</td>
</tr>
<tr>
<td>Newcastle-West</td>
<td>16</td>
<td>8</td>
</tr>
<tr>
<td>Kerry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tralee</td>
<td>25</td>
<td>8</td>
</tr>
<tr>
<td>Listowel</td>
<td>25</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>223</td>
<td>75</td>
</tr>
<tr>
<td>Galway</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Galway</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ballinasloe</td>
<td>31</td>
<td>11</td>
</tr>
<tr>
<td>Loughrea</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mayo</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ballina</td>
<td>29</td>
<td>9</td>
</tr>
<tr>
<td>Westport</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>20</td>
</tr>
<tr>
<td>Donegal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Letterkenny</td>
<td>28</td>
<td>9</td>
</tr>
<tr>
<td>Ballyshannon</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buncrana</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>9</td>
</tr>
<tr>
<td>Grand Total</td>
<td>542</td>
<td>183</td>
</tr>
</tbody>
</table>

**DENTAL CARIES IN IRELAND**
## Table 4
### Average Dental Condition of Children in Each Area—Classified by Age-Group

#### Age-Group 5 to 6 Years

<table>
<thead>
<tr>
<th>Area</th>
<th>Number of Children</th>
<th>Percentage with complete dentitions free from caries (All teeth)</th>
<th>Percentage with 5 or more DMF deciduous teeth</th>
<th>Average per Child Examined (Deciduous)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>DMF</td>
</tr>
<tr>
<td>Dublin Co. Borough</td>
<td>177</td>
<td>4.0</td>
<td>72.3</td>
<td>7.2</td>
</tr>
<tr>
<td>Other Town Areas</td>
<td>183</td>
<td>3.8</td>
<td>65.6</td>
<td>7.0</td>
</tr>
<tr>
<td>Rural Areas</td>
<td>202</td>
<td>5.0</td>
<td>69.3</td>
<td>6.9</td>
</tr>
<tr>
<td>Congested Districts</td>
<td>142</td>
<td>4.2</td>
<td>64.8</td>
<td>6.3</td>
</tr>
<tr>
<td>Total</td>
<td>704</td>
<td>4.3</td>
<td>68.2</td>
<td>6.9</td>
</tr>
</tbody>
</table>

#### Age-Group 7 to 8 Years

<table>
<thead>
<tr>
<th>Area</th>
<th>Number of Children</th>
<th>Percentage with complete dentitions free from caries (All teeth)</th>
<th>Percentage with 5 or more DMF deciduous teeth</th>
<th>Average per Child Examined (Deciduous)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>DMF</td>
</tr>
<tr>
<td>Dublin Co. Borough</td>
<td>183</td>
<td>0.5</td>
<td>79.2</td>
<td>7.2</td>
</tr>
<tr>
<td>Other Town Areas</td>
<td>185</td>
<td>1.6</td>
<td>78.9</td>
<td>7.2</td>
</tr>
<tr>
<td>Rural Areas</td>
<td>253</td>
<td>1.6</td>
<td>73.1</td>
<td>6.3</td>
</tr>
<tr>
<td>Congested Districts</td>
<td>182</td>
<td>1.4</td>
<td>63.2</td>
<td>5.9</td>
</tr>
<tr>
<td>Total</td>
<td>803</td>
<td>1.4</td>
<td>73.6</td>
<td>6.6</td>
</tr>
</tbody>
</table>

#### Age-Group 7 to 8 Years

<table>
<thead>
<tr>
<th>Area</th>
<th>Number of Children</th>
<th>Percentage with complete dentitions free from caries (All teeth)</th>
<th>Percentage with 5 or more DMF permanent teeth</th>
<th>Average per Child Examined (Permanent)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>DMF</td>
</tr>
<tr>
<td>Dublin Co. Borough</td>
<td>183</td>
<td>0.5</td>
<td>0.5</td>
<td>2.3</td>
</tr>
<tr>
<td>Other Town Areas</td>
<td>185</td>
<td>1.6</td>
<td>1.1</td>
<td>2.2</td>
</tr>
<tr>
<td>Rural Areas</td>
<td>253</td>
<td>1.6</td>
<td>0.4</td>
<td>2.2</td>
</tr>
<tr>
<td>Congested Districts</td>
<td>182</td>
<td>1.6</td>
<td>0.9</td>
<td>2.3</td>
</tr>
<tr>
<td>Total</td>
<td>803</td>
<td>1.4</td>
<td>0.6</td>
<td>2.2</td>
</tr>
</tbody>
</table>

#### Age-Group 12 to 13 Years

<table>
<thead>
<tr>
<th>Area</th>
<th>Number of Children</th>
<th>Percentage with complete dentitions free from caries (All teeth)</th>
<th>Percentage with 5 or more DMF permanent teeth</th>
<th>Average per Child Examined (Permanent)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>DMF</td>
</tr>
<tr>
<td>Dublin Co. Borough</td>
<td>172</td>
<td>0.6</td>
<td>79.7</td>
<td>7.2</td>
</tr>
<tr>
<td>Other Town Areas</td>
<td>174</td>
<td>1.1</td>
<td>70.1</td>
<td>6.4</td>
</tr>
<tr>
<td>Rural Areas</td>
<td>226</td>
<td>1.7</td>
<td>61.4</td>
<td>6.3</td>
</tr>
<tr>
<td>Congested Districts</td>
<td>176</td>
<td>—</td>
<td>64.2</td>
<td>6.1</td>
</tr>
<tr>
<td>Total</td>
<td>758</td>
<td>0.9</td>
<td>68.2</td>
<td>6.5</td>
</tr>
</tbody>
</table>
# DENTAL CARIES IN IRELAND

## TABLE 4A

### AVERAGE DENTAL CONDITION OF CHILDREN IN THE DIFFERENT AREAS OF DUBLIN COUNTY BOROUGH—CLASSIFIED BY AGE-GROUP

#### AGE-GROUP 5 TO 6 YEARS

<table>
<thead>
<tr>
<th>Area</th>
<th>Number of Children</th>
<th>Percentage with complete dentitions free from caries (All teeth)</th>
<th>Percentage with 5 or more DMF deciduous teeth</th>
<th>Average per Child Examined (Deciduous)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>DMF</td>
</tr>
<tr>
<td>Centre City (Slum)</td>
<td>57</td>
<td>5.3</td>
<td>86.0</td>
<td>7.9</td>
</tr>
<tr>
<td>Crumlin (Artisan) ..</td>
<td>56</td>
<td>1.8</td>
<td>75.0</td>
<td>7.7</td>
</tr>
<tr>
<td>Glasnevin, Drumcondra (Middle-class) ..</td>
<td>64</td>
<td>4.7</td>
<td>57.8</td>
<td>6.2</td>
</tr>
<tr>
<td><strong>Total ..</strong></td>
<td><strong>177</strong></td>
<td><strong>4.0</strong></td>
<td><strong>72.3</strong></td>
<td><strong>7.2</strong></td>
</tr>
</tbody>
</table>

#### AGE-GROUP 7 TO 8 YEARS

<table>
<thead>
<tr>
<th>Area</th>
<th>Number of Children</th>
<th>Percentage with complete dentitions free from caries (All teeth)</th>
<th>Percentage with 5 or more DMF deciduous teeth</th>
<th>Average per Child Examined (Deciduous)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>DMF</td>
</tr>
<tr>
<td>Centre City (Slum)</td>
<td>58</td>
<td>—</td>
<td>86.2</td>
<td>7.8</td>
</tr>
<tr>
<td>Crumlin (Artisan) ..</td>
<td>58</td>
<td>1.7</td>
<td>79.3</td>
<td>7.0</td>
</tr>
<tr>
<td>Glasnevin, Drumcondra (Middle-class) ..</td>
<td>67</td>
<td>—</td>
<td>73.1</td>
<td>6.7</td>
</tr>
<tr>
<td><strong>Total ..</strong></td>
<td><strong>183</strong></td>
<td><strong>0.5</strong></td>
<td><strong>79.2</strong></td>
<td><strong>7.2</strong></td>
</tr>
</tbody>
</table>

#### AGE-GROUP 12 TO 13 YEARS

<table>
<thead>
<tr>
<th>Area</th>
<th>Number of Children</th>
<th>Percentage with complete dentitions free from caries (All teeth)</th>
<th>Percentage with 5 or more DMF permanent teeth</th>
<th>Average per Child Examined (Permanent)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>DMF</td>
</tr>
<tr>
<td>Centre City (Slum)</td>
<td>56</td>
<td>1.8</td>
<td>73.2</td>
<td>6.4</td>
</tr>
<tr>
<td>Crumlin (Artisan) ..</td>
<td>56</td>
<td>—</td>
<td>82.1</td>
<td>7.7</td>
</tr>
<tr>
<td>Glasnevin, Drumcondra (Middle-class) ..</td>
<td>60</td>
<td>—</td>
<td>83.3</td>
<td>7.4</td>
</tr>
<tr>
<td><strong>Total ..</strong></td>
<td><strong>172</strong></td>
<td><strong>0.6</strong></td>
<td><strong>79.7</strong></td>
<td><strong>7.2</strong></td>
</tr>
</tbody>
</table>
ANALYSIS OF TABLES

Table 1 shows the number of children examined in each age-group in each area of the country. In Dublin County Borough, 322 children were examined, while 542 children were examined in Other Town Areas. In Rural Areas, 691 children were examined, and in the Congested Districts the number amounted to 500. It will be observed that in each of these four main areas the numbers were selected in such a manner that about one-third of the children fell into each of the three age-groups. Of the total of 2,265 children examined in the country, 704 were aged between 5 and 6 years, 803 between 7 and 8 years and 758 between 12 and 13 years.

Table 2 is a summary of the dental condition of the children in each of the four main areas. In this table two columns are shown for decayed teeth, for total DMF and for cavity count, respectively. The difference between the figures in each pair of columns and the method of obtaining the figures for total DMF, for cavity count and for caries degree, have already been explained on pages 6 and 7. In the following analysis of this and succeeding tables only the columns headed (a) are considered in referring to decayed teeth, total DMF and cavity count.

The total number of deciduous teeth in the group of 704 children aged between 5 and 6 years was 13,581, of which 8,725 were sound and 4,856 were decayed, missing or filled. The number of decayed or missing teeth was 4,850, or 35·7 per cent. of the total, and only 10 teeth were filled (of which four had again decayed), amounting to less than 0·1 per cent. of the total. Expressed in terms of averages per child, the total number of deciduous teeth was 19·3 per child, of which 12·4 were sound, 6·4 decayed and 0·5 missing.

The children aged between 5 and 6 years had also 1,022 permanent teeth, of which 840 were sound and 182 decayed. Thus, 17·8 per cent. of the recently erupted permanent teeth were already decayed. The average number of permanent teeth per child was 1·5, of which 1·2 were sound and 0·3 decayed. No permanent teeth were missing or filled.

The 803 children between the ages of 7 and 8 years had 11,371 deciduous teeth, of which only 6,063 were sound, while 5,308 were decayed, missing or filled. The number of decayed or missing teeth was 5,302, or 46·6 per cent. of the total, while the number of teeth filled was negligible, amounting to only 9, or less than 0·1 per cent. of all teeth. In terms of averages per child the total number of deciduous teeth was 14·2, of which 7·6 were sound, 5·8 decayed and 0·8 missing.

The children aged between 7 and 8 years had 7,199 permanent teeth, of which 5,412 were sound, 1,765 decayed, 21 missing and only 3 filled. The high proportion of teeth decayed or missing, amounting to 24·8 per cent., is notable: The average number of permanent teeth per child was 9·0, of which 6·7 were sound, 2·2 were decayed and less than 0·1 were missing or filled.

The 758 children between the ages of 12 and 13 years had, of course, shed practically all their deciduous teeth. The number remaining was 992,
of which 554 were sound, 433 were decayed and 5 were missing, equivalent
to 1.3 teeth per child, of which 0.7 were sound and 0.6 were decayed.

The same group of children had 19,007 permanent teeth, of which
14,114 were sound, 4,316 were decayed, 404 were missing and 167 were
filled. The average number of permanent teeth per child was 25.1, of
which 18.6 were sound, 5.7 were decayed, and 0.6 were missing and 0.2
were filled. The proportion of teeth decayed or missing was 25.1 per cent.,
which was about the same as the proportion of permanent teeth decayed
or missing among the children aged between 7 and 8 years. The number
of teeth filled, although very small in comparison with the number decayed
and with the total number of teeth, was considerably in excess of the
figure for the younger children.

The results show that, in the case of deciduous teeth, children receive
virtually no dental care as regards the filling of teeth, and even in the case
of permanent teeth, children up to the age of 13 years appear to receive
very little attention with regard to the filling of decayed teeth. From the
results shown it is evident that about one in four permanent teeth is decayed
or missing at the age of 13 years.

From an examination of the figures in Table 2 for the different areas
of the country, it appears that differences between the areas are not large.
Further mention of this point will be made later, in discussing Tables 4
and 4A.

Table 2A shows particulars, similar to those in Table 2, in respect of
each of the three districts in Dublin County Borough. It is unnecessary
to discuss the results further, except to point out that the facts revealed
by the figures are very similar to those implied in Table 2. This can be
seen most easily by comparing the lines showing “average number per
child examined,” with those in Table 2.

Table 3 shows the distribution of children according to the number of
decayed, missing and filled teeth. Only 30, or 4.3 per cent. of the 704
children aged between 5 and 6 years, had complete dentitions free from
caries, and 3 others, or 0.4 per cent., had all their deciduous teeth free
from caries. The number of children, with under 5 DMF deciduous teeth
was 191, or 27.1 per cent. of the total. The number of children with 5
and under 12 DMF deciduous teeth was 365, or 52.0 per cent. of all the
children aged between 5 and 6 years. The remainder, amounting to 115
children, or 16.3 per cent., had 12 or more DMF teeth.

The children aged between 7 and 8 years are classified according to the
number of DMF deciduous teeth and also according to the number of
DMF permanent teeth. Of the 803 children only 11, or 1.4 per cent., had
complete dentitions free from caries, and a further 13 children, or 1.6 per
cent., had all their remaining deciduous teeth free from caries. The number
of children with less than 5 DMF deciduous teeth was 188, or 23.5 per
cent. of the total. The number of children with 5 and under 12 DMF
deciduous teeth was 532, or 66.2 per cent. The remaining 59 children,
or 7.4 per cent., had 12 or more DMF deciduous teeth.

The classification of the 803 children between the ages of 7 and 8 years,
according to the number of DMF permanent teeth, shows that 11, or 1.4 per cent., had complete dentitions free from caries, and a further 120 children, or 14.9 per cent., had all their permanent teeth free from caries. On account of the small number of permanent teeth which children have at age 7 years practically all the other children had less than 5 DMF permanent teeth and no child had more than 5 DMF teeth.

The 758 children aged between 12 and 13 years are classified according to DMF permanent teeth. Only 7 of these children had complete dentitions free from caries and a further 9 children or 1.2 per cent. had all their permanent teeth from caries. The number of children with less than 5 DMF teeth was 225 or 29.6 per cent., while 445 children, or 56.6 per cent., had 5 and under 12 DMF teeth. The number of children with 12 or more DMF teeth was 72 or 9.5 per cent.

Table 3A shows, for the children in each district in Dublin County Borough, particulars similar to those in Table 3. A comparison of Tables 3 and 3A indicates that dental caries occurs to a similar extent in all the areas examined.

This is confirmed by Table 4, which summarises the average dental condition in the different areas. At between 5 and 6 years of age only 4.3 per cent. of all children had complete dentitions free from caries. The proportions varied from 3.8 per cent. in Other Town Areas to 5.0 per cent. in Rural Areas. The proportion with 5 or more DMF teeth was 68.2 per cent., and there was little variation in this figure between the different areas. The average number of DMF teeth per child examined was 6.9. The cavity count was 8.5 per child and the caries degree was 15.4 per child.

The figures in the other age-groups also indicate that any variation between areas is not well-marked, although the extent of dental caries in Dublin County Borough appears to be slightly greater than elsewhere. Table 4A, which relates to the three areas selected in Dublin County Borough, is similar to Table 4.

SUMMARY.

The main facts revealed by the Survey may be summarised as follows:—

1. The incidence of dental caries among school children is very high. The attention paid to the filling of teeth is negligible. Little is done to arrest the progress of decay.

2. The incidence of dental caries among children in different areas does not, in general, show any significant difference.

3. The figures in the sample examined show that the dental condition of school children living in the Congested Districts, where the National Nutrition Survey had indicated that the dietaries were simple and plain, was only slightly better than that in the samples from the other areas included in the Survey. No differences, even remotely approaching those reported in the Channel Islands, were encountered.

4. It is not possible to associate the incidence of dental caries with the intake of certain foods in the different areas as ascertained by the National Nutrition Survey.
REFERENCES

E. R. Bransby—personal communication.


FIGURE 1

<table>
<thead>
<tr>
<th>School</th>
<th>Date</th>
<th>Name</th>
<th>Date of Birth</th>
<th>Sex</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Place of Birth</th>
<th>Date of entry to school</th>
</tr>
</thead>
</table>

Capital letters to be used for deciduous teeth.
Numerals to be used for permanent teeth.
Delete symbol which does not apply.

Tooth sound =

Cavity = o

Filling = As “Cavity” but blocked in.

Root = +

Extraction = x

Clinical Notes:

Condition of the teeth:

Structure

Hypoplasia

Oclusion

Hygiene

Staining

Gun condition

Breathing

Nose

Mouth

Note.—All teeth are shown diagrammatically as square boxes. These boxes are divided by lines to indicate the various areas and surfaces presented by the tooth. An area representing the mental, distal, buccal (labial), and lingual surfaces of each tooth is shown. The occlusal surface of the molars and premolars is represented by the small inside square on their respective boxes.
School.................................................. Date...........................................
Name of Child................................. Sex...........................................
Address.............................................................................................................
Place of Birth.................................................................................................
Head of Household................................. Mother/Father alive..................

A. Social circumstances of Family:
(i) (a) Family income per week from non-agricultural
    employments........................................ £.................................
    (b) P.L.V. of agricultural land (excluding buildings) £.................................
(ii) Number in family
    (a) Children 0–13 years ........................................
    (b) Number gainfully employed (including out of
        work) ........................................
    (c) Others in family ........................................
    (d) Total in family ........................................
(iii) (a) Normal occupation in detail of head of household
..........................................................................................................................
    (b) Industrial status of head of household (whether employer, worker on own
        account, relative assisting, employee at work, unemployed)
..........................................................................................................................

B. Mother:
(i) Present age........................................
(ii) Parity at birth of child........................
(iii) Diet during pregnancy:
    (a) State if it included adequate quantities of the following—
        Milk.
        Cheese.
        Fruit.
        Vegetables.
        Vitamin C.
        Cod liver oil or other vitamin D preparation.
        Set “X” opposite the items of which you think quantities were adequate.
    (b) Bread : State if intake was normal or excessive of each of the following—
        Bakers’ White.
        Brown.
        Home-made White.
        Brown.
    (c) Was it of the predominantly “Bread and spread” variety.

C. Early diet of Child:
(i) If breast fed, and for how long ..................................................
(ii) Other infant foods given—.................................................................
(iii) Up to 3 years of age—
    (a) Did the child get adequate quantities of the following—
        Milk.
        Cheese.
        Fruit.
        Vegetables.
        Vitamin C.
        Cod liver oil or other vitamin D preparation.
        Set “X” opposite the items of which you think quantities were adequate.
(b) With regard to the following, were the amounts normal or excessive—
- Bread: Bakers’ — White.
- — Brown.
- Home-made—White.
- — Brown.
- Porridge.
- Sugar.
- Jam.
- Sweets.

(c) Was it of the predominantly “Bread and spread” variety.

(iv) Thumb-sucking, and if so, up to what age?

(v) Soother, and if so, to what age?

D. Present diet of Child:
(a) Does the child get adequate quantities of the following—
- Milk.
- Cheese.
- Fruit.
- Vegetables.
- Vitamin C.
- Cod liver oil or other vitamin D preparation.

Set “X” opposite the items of which you think quantities are adequate.

(b) With regard to the following, are the amounts normal or excessive—
- Bread: Bakers’ — White.
- — Brown.
- Home-made—White.
- — Brown.
- Porridge.
- Sugar.
- Jam.
- Sweets.

(c) Is it of the predominantly “Bread and spread” variety?

E. Teeth of Parents:
- Mother.................................................................
- Father.................................................................

APPENDIX

ANALYSIS OF DENTAL CARIES BY SOCIAL FACTORS

As a part of the main inquiry, it was decided to undertake a special investigation with a view to ascertaining if dental caries was due, in whole or in part, to any of a wide range of factors, social, economic, dietetic, hereditary, which may be generally termed “ancillary factors.” The statistical method used for this part of the enquiry is that termed Analysis of Variance. This method involves a break-down of the sum of squares of the deviations of each individual measure from the general mean into a number of exclusive categories. For each category a mean-square is established as the quotient of the sum-squares falling into the category by the number of “degrees of freedom.” If there were no causal effects operating in the categories the mean-squares would differ only by chance, in other words, if the number of elements in each category were indefinitely large, and if the categorisation had no influence, all the mean-squares would be equal.

The statistical instrument used for assessing whether two categories are
significantly different is, therefore, the ratio of mean-squares for pairs of categories. This is the statistic $F$.

Since most ancillary factors are common to members of the same family, it was considered desirable, as a preliminary to the analysis of the results of the ancillary inquiry proper, to match all the forms in the main survey relating to brothers and sisters, and to analyse the total variation of dental caries in this group of brothers and sisters by dividing it into two parts, the variation within families and the variation between families. If the variation within families were significantly smaller than the variation between families, then this difference might be related to those factors which differed between families, but did not vary greatly among the members of the same family. This analysis showed that the variation in dental condition between children in the same family was much smaller than the variation between families, thus leading to the conclusion that there is a tendency for persons in the same family to have approximately the same dental condition.

There were 506 brothers and sisters among the children examined in the main survey. These were distributed as follows:

<table>
<thead>
<tr>
<th>Area</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dublin County Borough</td>
<td>50</td>
</tr>
<tr>
<td>Other Town Areas</td>
<td>92</td>
</tr>
<tr>
<td>Rural Areas</td>
<td>215</td>
</tr>
<tr>
<td>Congested Districts</td>
<td>149</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>506</strong></td>
</tr>
</tbody>
</table>

For each one of these 506 children, the DMF number, based on Column (a), and the caries degree were expressed as percentages of the respective general averages in the same group in the same areas, as ascertained from the results of the main survey. The total variation between these percentages among brothers and sisters in each area was analysed by dividing it into two parts, the variation of individuals within families about the respective family means, and the variation of family means about the mean of all brothers and sisters in the same area. This analysis was also carried out for the total number of brothers and sisters in the four areas, and a further analysis of seventeen sets of twins, which were included in the sample of brothers and sisters, was carried out separately. The results are shown in Table II.
### TABLE II
ANALYSIS OF VARIANCE OF DMF TEETH AND CARIES DEGREE FOR BROTHERS AND SISTERS

<table>
<thead>
<tr>
<th>DMF</th>
<th>Caries Degree</th>
<th>Number of families</th>
<th>Number of individuals</th>
<th>Significant values of F at 5 per cent. level</th>
<th>Significant values of F at 1 per cent. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td></td>
<td>246</td>
<td>506</td>
<td>1.2</td>
<td>1.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2.0</td>
<td>2.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.6</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.3</td>
<td>1.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.4</td>
<td>1.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2.3</td>
<td>3.3</td>
</tr>
<tr>
<td>Dublin Co. Borough</td>
<td></td>
<td>25</td>
<td>50</td>
<td>1.2</td>
<td>1.2</td>
</tr>
<tr>
<td>Other Town Areas</td>
<td></td>
<td>46</td>
<td>92</td>
<td>2.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Rural Areas</td>
<td></td>
<td>103</td>
<td>215</td>
<td>1.6</td>
<td>1.5</td>
</tr>
<tr>
<td>Congested Districts</td>
<td></td>
<td>72</td>
<td>149</td>
<td>1.4</td>
<td>1.7</td>
</tr>
<tr>
<td>Twins (included in preceding columns)</td>
<td></td>
<td>17</td>
<td>34</td>
<td>2.3</td>
<td>3.3</td>
</tr>
</tbody>
</table>

**Ratio of mean-squares (a) between and (b) within families = F**

- Total: 2.62
- Dublin Co. Borough: 2.82
- Other Town Areas: 2.14
- Rural Areas: 4.47
- Congested Districts: 2.23
- Twins (included in preceding columns): 7.72

**Significant values of F at 5 per cent. level**
- Total: 1.2
- Dublin Co. Borough: 2.0
- Other Town Areas: 1.6
- Rural Areas: 1.3
- Congested Districts: 1.4
- Twins (included in preceding columns): 2.3

**Significant values of F at 1 per cent. level**
- Total: 1.2
- Dublin Co. Borough: 2.6
- Other Town Areas: 2.0
- Rural Areas: 1.5
- Congested Districts: 1.7
- Twins (included in preceding columns): 3.3
It will be observed that in every case the ratio of the mean-squares between and within families is considerably greater than unity. In nearly all cases the ratio of the two variances is significant at the 1 per cent. probability level.

The total variance was also analysed into (a) between families within areas, (b) between areas; and (c) within families. The results are shown in Table III.

### Table III

**Analysis of Variance of DMF Teeth and Caries Degree for Brothers and Sisters, Distinguishing (a) Between Families Within Areas, (b) Between Areas, (c) Within Families**

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DMF</td>
<td>Caries</td>
<td>Degree</td>
</tr>
<tr>
<td>Ratio of mean-squares (a) between families within areas and (c) within families = $F_1$</td>
<td>2.62</td>
<td>2.82</td>
<td></td>
</tr>
<tr>
<td>Ratio of mean-squares (b) between areas and (c) within families = $F_2$</td>
<td>2.55</td>
<td>2.50</td>
<td></td>
</tr>
<tr>
<td>Number of families</td>
<td>246</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of individuals</td>
<td>506</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of areas</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Significant values of $F_1$ at 5 per cent. level</td>
<td>1.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Significant values of $F_1$ at 1 per cent. level</td>
<td>1.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Significant values of $F_2$ at 5 per cent. level</td>
<td>2.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Significant values of $F_2$ at 1 per cent. level</td>
<td>3.9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It will be observed that the ratio of (a) to (c) is very significantly different from unity while the ratio of (b) to (c) is not significantly different from unity.

The mean-square between children in the same family is much smaller than the mean-square between families. In other words, there is a tendency for persons in the same family to have the same dental condition. Having established this point, it seems reasonable to expect that significant differences would arise in the variation of dental conditions with some of the ancillary factors for which information had been obtained.

For the inquiry into variation of dental condition with various ancillary factors, every tenth child in the main survey was selected. The number of children examined was 231. A visit was made by the investigator to the home of each of these children and information was obtained from the parents of the children. Particulars were entered on a special social investigation form (Figure 2). Each of the factors on the form is an
independent variable and it was decided, after examination of the data on
the forms, to reduce the number of variables by certain amalgamations.
The following twenty-three independent variables were finally selected:

(1) Sex and age.
(2) Area.
(3) Family Income per head.
(4) Social Group of head of household.
(5) Age of mother at birth of child.
(6) Parity.
(7) Degree of sufficiency of calcium in diet during pregnancy.
(8) Degree of sufficiency of fruit, vegetables and vitamin C in diet during
pregnancy.
(9) Degree of sufficiency of cod liver oil or other sources of vitamin D in
diet during pregnancy.
(10) Quantity of brown bread and "bread and spread" in diet during pregnancy.
(11) Breast-feeding.
(12) Degree of sufficiency of calcium in early diet of child.
(13) Degree of sufficiency of fruit, vegetables and vitamin C in early diet
of child.
(14) Degree of sufficiency of cod liver oil or other sources of vitamin D in
early diet of child.
(15) Quantity of brown bread, porridge and "bread and spread" in early
diet of child.
(16) Quantity of sugar, sweets and jam in early diet of child.
(17) Degree of sufficiency of calcium in present diet of child.
(18) Degree of sufficiency of fruit, vegetables and vitamin C in present diet
of child.
(19) Degree of sufficiency of cod liver oil or other sources of vitamin D in
present diet of child.
(20) Quantity of brown bread, porridge and "bread and spread" in present
diet of child.
(21) Quantity of sugar, sweets and jam in present diet of child.
(22) Condition of teeth of mother during childhood.
(23) Condition of teeth of father during childhood.

A classification was adopted in respect of each of these variables, and
on each form a code number was inserted for each of the variables, this
code number representing the class to which the child was allocated. The
DMF number for each of the two methods [(a) and (b), p. 6] of measure-
ment and the caries degree were also inserted on each form for deciduous,
permanent and total teeth, separately. There were in all, therefore, nine
dependent variables and it was necessary to investigate whether the
variations in the dependent variables could be explained by variations in
the independent variables.

As already stated certain items on the social investigation form were
amalgamated. For example, one of the questions on the form related to
the sufficiency of each of the following items in the diet during pregnancy:
milk, cheese, fruit, vegetables, vitamin C, and cod-liver oil or other sources
of vitamin D. It was considered that these six items could be reduced to
three, namely, milk and cheese (sources of calcium), fruit, vegetables and
other sources of vitamin C; cod liver oil or other sources of vitamin D.
For the purpose of classifying the data by levels of sufficiency, the system described in the next paragraph was adopted.

The number (3) was allotted to the form if milk intake was returned as being adequate and (2) was allotted if the intake of cheese was adequate. On a number of forms an intake of calcium tablets was mentioned and in such cases, the number (3) was added to the numbers already given in respect of milk and cheese, but it was agreed that the total number for this variable (degree of sufficiency of calcium) should not exceed (6). The reason for this was that it was considered that an extra intake of calcium tablets would not have any marked effect in cases where the intake of milk and cheese was deemed to be adequate, but would be beneficial in cases where one or other of these foods was consumed in inadequate quantities. It is evident that the larger the code number for degree of sufficiency of milk and cheese, the greater will be the intake of calcium.

For the group consisting of fruit, vegetables and vitamin C, the number (1) was allotted for sufficiency of any one of these foods. The code number, therefore, for all three together must necessarily be between (0) and (3). By this method a classification into groups of similar cases was obtained in respect of each of the twenty-three independent variables.

It will be realised that classification according to degree of intake of certain foods is not exact. There are many difficulties in producing an exact classification in respect of such items. The mother will not remember the details of her diet during a pregnancy which occurred not less than five years ago, and, in many cases, up to twelve years ago. Persons in different social groups may have very different ideas about what constitutes an adequate amount of certain foods. To complicate the matter further, some persons may have a tendency, deliberate or otherwise, to exaggerate either the adequacy, or inadequacy of their diet. Although the investigator who conducted the inquiry tried, as far as possible, to eliminate errors arising from these causes, it can scarcely be said that the classification by degree of sufficiency of intake of certain foods is entirely satisfactory.

The 231 children were classified according to each of the 23 variables in turn and the average DMF teeth and the average caries degree per child were compiled for each class for each variable. These averages are shown in Table IV.
| Age-Group and Area | Number of Children | Total Number | Decayed | Missing | Filled | Total DMF | Caries Count | Caries Degree | State of Teeth | Decayed | Missing | Filled | Total DMF | Caries Count | Caries Degree | State of Teeth |
|--------------------|--------------------|--------------|--------|---------|--------|----------|-------------|---------------|---------------|-------------|---------|---------|--------|----------|-------------|---------------|---------------|
| 5 to 6 years       |                    |              |        |         |        |          |             |               |              |            |         |         |        |          |             |               |               |
| Total              | 704                | 13,518       | 8,728  | 4,281   | 3,451  | 10       | 4,856      | 4,137         | 5,958         | 5,478      | 10,623  | 1,122   | 1       | 1-2       | 1-2           | 1-2           |               |
| Average number per child examined | 19-3 | 12-4 | 6-4 | 5-5 | 5-9 | 5-9 | 1-5 | 1-2 | 1-5 | 0-3 | 0-1 | 0-1 |             |               |               |
| 7 to 8 years       |                    |              |        |         |        |          |             |               |              |            |         |         |        |          |             |               |               |
| Total              | 803                | 11,371       | 6,065  | 4,675   | 4,356  | 627      | 5,308      | 4,789         | 5,940         | 5,492      | 12,713  | 7,199   | 5,412  | 1,765     | 780         | 21            | 3             | 1,787       | 903        | 3,060   | 1,078   |
| Average number per child examined | 14-2 | 7-6 | 5-8 | 5-2 | 5-8 | 6-6 | 6-0 | 7-4 | 6-1 | 5-2 | 1-0 | 1-3 |             |               |               |
| 12 to 13 years     |                    |              |        |         |        |          |             |               |              |            |         |         |        |          |             |               |               |
| Total              | 758                | 992          | 554    | 423     | 366    | 5        | 438        | 371           | 533           | 424        | 977     | 19,007  | 14,714 | 4,716     | 2,490       | 464           | 167           | 4,955       | 2,080     | 5,740   | 3,898   |
| Average number per child examined | 1-3 | 0-7 | 0-8 | 0-5 | 0-5 | 0-7 | 0-8 | 1-3 | 2-1 | 1-6 | 0-2 | 0-5 |             |               |               |

* See page 6.
### DECIDUOUS TEETH

<table>
<thead>
<tr>
<th>Total number</th>
<th>Sound</th>
<th>Decayed</th>
<th>Missing</th>
<th>Filled</th>
<th>Total DMF</th>
<th>Caries Count</th>
<th>Caries Degree</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>2+3+4+5</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8+9+10+11</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td>3,409</td>
<td>2,133</td>
<td>1,103</td>
<td>54</td>
<td>172</td>
<td>1</td>
<td>1,276</td>
<td>1,087</td>
<td>1,464</td>
</tr>
<tr>
<td>3,537</td>
<td>2,260</td>
<td>1,189</td>
<td>50</td>
<td>67</td>
<td>3p</td>
<td>1,277</td>
<td>1,117</td>
<td>1,572</td>
</tr>
<tr>
<td>3,904</td>
<td>3,501</td>
<td>1,561</td>
<td>122</td>
<td>148</td>
<td>7q</td>
<td>1,403</td>
<td>1,195</td>
<td>1,782</td>
</tr>
<tr>
<td>2,731</td>
<td>1,831</td>
<td>269</td>
<td>71</td>
<td>27</td>
<td>5t</td>
<td>500</td>
<td>738</td>
<td>1,141</td>
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</table>

### PERMANENT TEETH

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<th>Missing</th>
<th>Filled</th>
<th>Total DMF</th>
<th>Caries Count</th>
<th>Caries Degree</th>
<th>Number</th>
</tr>
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<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8+9+10+11</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td>3,409</td>
<td>2,133</td>
<td>1,103</td>
<td>54</td>
<td>172</td>
<td>1</td>
<td>1,276</td>
<td>1,087</td>
<td>1,464</td>
</tr>
<tr>
<td>3,537</td>
<td>2,260</td>
<td>1,189</td>
<td>50</td>
<td>67</td>
<td>3p</td>
<td>1,277</td>
<td>1,117</td>
<td>1,572</td>
</tr>
<tr>
<td>3,904</td>
<td>3,501</td>
<td>1,561</td>
<td>122</td>
<td>148</td>
<td>7q</td>
<td>1,403</td>
<td>1,195</td>
<td>1,782</td>
</tr>
<tr>
<td>2,731</td>
<td>1,831</td>
<td>269</td>
<td>71</td>
<td>27</td>
<td>5t</td>
<td>500</td>
<td>738</td>
<td>1,141</td>
</tr>
</tbody>
</table>

### TABLE 2

**SUMMARY OF THE DENTAL CONDITION OF CHILDREN IN THE DIFFERENT AREAS, CLASSIFIED BY AGE-GROUP**

<table>
<thead>
<tr>
<th>Area</th>
<th>Number of Children</th>
<th>Age-Group and Area</th>
<th>Total</th>
<th>Average number per child examined</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 to 6 years:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dublin Co. Borough</td>
<td>197</td>
<td></td>
<td>7579</td>
<td>4</td>
</tr>
<tr>
<td>Other Town Areas</td>
<td>183</td>
<td></td>
<td>5584</td>
<td>3.20</td>
</tr>
<tr>
<td>Rural Areas</td>
<td>185</td>
<td></td>
<td>628</td>
<td>7.08</td>
</tr>
<tr>
<td>Congested Districts</td>
<td>192</td>
<td></td>
<td>569</td>
<td>3.38</td>
</tr>
<tr>
<td>7 to 8 years:</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dublin Co. Borough</td>
<td>131</td>
<td></td>
<td>4956</td>
<td>7.44</td>
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<td></td>
<td>628</td>
<td>7.08</td>
</tr>
<tr>
<td>Rural Areas</td>
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<td>546</td>
<td>4.80</td>
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<tr>
<td>Congested Districts</td>
<td>185</td>
<td></td>
<td>564</td>
<td>3.38</td>
</tr>
<tr>
<td>12 to 13 years:</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dublin Co. Borough</td>
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<td></td>
<td>2901</td>
<td>7.08</td>
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<tr>
<td>Other Town Areas</td>
<td>183</td>
<td></td>
<td>628</td>
<td>7.08</td>
</tr>
<tr>
<td>Rural Areas</td>
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<td></td>
<td>543</td>
<td>2.58</td>
</tr>
<tr>
<td>Congested Districts</td>
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<td></td>
<td>557</td>
<td>2.93</td>
</tr>
<tr>
<td>Total</td>
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<td>4690</td>
<td>3.20</td>
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</table>

**TABLE 3**

<table>
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<tr>
<th>Area</th>
<th>Number of Children</th>
<th>Age-Group and Area</th>
<th>Total</th>
<th>Average number per child examined</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 to 6 years:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dublin Co. Borough</td>
<td>197</td>
<td></td>
<td>7579</td>
<td>4</td>
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<td>Other Town Areas</td>
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<tr>
<td>Rural Areas</td>
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<td>7.08</td>
</tr>
<tr>
<td>Congested Districts</td>
<td>192</td>
<td></td>
<td>569</td>
<td>3.38</td>
</tr>
<tr>
<td>7 to 8 years:</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Dublin Co. Borough</td>
<td>131</td>
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<tr>
<td>Other Town Areas</td>
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<td></td>
<td>628</td>
<td>7.08</td>
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<tr>
<td>Rural Areas</td>
<td>203</td>
<td></td>
<td>546</td>
<td>4.80</td>
</tr>
<tr>
<td>Congested Districts</td>
<td>185</td>
<td></td>
<td>564</td>
<td>3.38</td>
</tr>
<tr>
<td>12 to 13 years:</td>
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<td>Other Town Areas</td>
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<td>628</td>
<td>7.08</td>
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<tr>
<td>Rural Areas</td>
<td>210</td>
<td></td>
<td>543</td>
<td>2.58</td>
</tr>
<tr>
<td>Congested Districts</td>
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<td></td>
<td>557</td>
<td>2.93</td>
</tr>
<tr>
<td>Total</td>
<td>300</td>
<td></td>
<td>4690</td>
<td>3.20</td>
</tr>
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</table>
### Table 2a: Summary of the Dental Condition of Children in the Different Areas of Dublin County Borough, Classified by Age-Group

#### Deciduous Teeth

<table>
<thead>
<tr>
<th>State of Teeth</th>
<th>Total Number</th>
<th>Sound</th>
<th>Decayed</th>
<th>DMF</th>
<th>Filled</th>
<th>Cavity Count</th>
<th>Caries Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(%)</td>
<td>(%)</td>
<td>(%)</td>
<td>(%)</td>
<td>(%)</td>
<td>(%)</td>
</tr>
<tr>
<td></td>
<td>2-3 years</td>
<td>1,305</td>
<td>450</td>
<td>400</td>
<td>150</td>
<td>800</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>4-5 years</td>
<td>1,305</td>
<td>450</td>
<td>400</td>
<td>150</td>
<td>800</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>6-7 years</td>
<td>1,305</td>
<td>450</td>
<td>400</td>
<td>150</td>
<td>800</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>8-9 years</td>
<td>1,305</td>
<td>450</td>
<td>400</td>
<td>150</td>
<td>800</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>10-11 years</td>
<td>1,305</td>
<td>450</td>
<td>400</td>
<td>150</td>
<td>800</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>12-13 years</td>
<td>1,305</td>
<td>450</td>
<td>400</td>
<td>150</td>
<td>800</td>
<td>100</td>
</tr>
</tbody>
</table>

#### Permanent Teeth

<table>
<thead>
<tr>
<th>State of Teeth</th>
<th>Total Number</th>
<th>Sound</th>
<th>Decayed</th>
<th>DMF</th>
<th>Filled</th>
<th>Cavity Count</th>
<th>Caries Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(%)</td>
<td>(%)</td>
<td>(%)</td>
<td>(%)</td>
<td>(%)</td>
<td>(%)</td>
</tr>
<tr>
<td></td>
<td>2-3 years</td>
<td>1,305</td>
<td>450</td>
<td>400</td>
<td>150</td>
<td>800</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>4-5 years</td>
<td>1,305</td>
<td>450</td>
<td>400</td>
<td>150</td>
<td>800</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>6-7 years</td>
<td>1,305</td>
<td>450</td>
<td>400</td>
<td>150</td>
<td>800</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>8-9 years</td>
<td>1,305</td>
<td>450</td>
<td>400</td>
<td>150</td>
<td>800</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>10-11 years</td>
<td>1,305</td>
<td>450</td>
<td>400</td>
<td>150</td>
<td>800</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>12-13 years</td>
<td>1,305</td>
<td>450</td>
<td>400</td>
<td>150</td>
<td>800</td>
<td>100</td>
</tr>
</tbody>
</table>

#### Age-Group and Area

- **5 to 6 years**: Centre City (Shin), Crumlin (Arterial), Glasnevin, Drumcondra (Middle-class)
- **7 to 8 years**: Centre City (Shin), Crumlin (Arterial), Glasnevin, Drumcondra (Middle-class)
- **12 to 13 years**: Centre City (Shin), Crumlin (Arterial), Glasnevin, Drumcondra (Middle-class)

### Notes

- * included in Decayed (a) and (b).
- $x$ included in Decayed (a) and (b).
- $y$ included in Decayed (a) and (b).
- $x$ included in Decayed (a) and (b).
<table>
<thead>
<tr>
<th>Age-Group and Area</th>
<th>Number of Children</th>
<th>Total Number</th>
<th>Deciduous Teeth</th>
<th>Permanent Teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sound</td>
<td>Decayed</td>
</tr>
<tr>
<td>5 or 6 years:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Centre City (Slum)</td>
<td>57</td>
<td>1,491</td>
<td>1</td>
<td>34</td>
</tr>
<tr>
<td>Cromwell (Arrian)</td>
<td>56</td>
<td>1,068</td>
<td>1</td>
<td>45</td>
</tr>
<tr>
<td>Glasnevin, Drumcondra (Middle-class)</td>
<td>64</td>
<td>1,230</td>
<td>1</td>
<td>394</td>
</tr>
<tr>
<td>Total</td>
<td>177</td>
<td>3,659</td>
<td>1</td>
<td>1,276</td>
</tr>
<tr>
<td>Average number per child examined</td>
<td>177</td>
<td>21.3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| 7 to 8 years:     |                    |              |       |         |         |        |          |             |               |       |         |         |        |          |             |               |
| Centre City (Slum) | 58                 | 978          | 1     | 22     | 26      | 0      | 48       | 1,191     | 57           | 518   | 377     | 136     | 66     | 4        | 125-131     | 157-161       |
| Cromwell (Arrian)  | 58                 | 932          | 1     | 408    | 375     | 90     | 498      | 1,055     | 46           | 129   | 109     | 52      | 40     | 4        | 125-131     | 157-161       |
| Glasnevin, Drumcondra (Middle-class) | 67   | 858          | 1     | 410    | 390     | 78     | 448      | 1,058     | 46           | 380   | 374     | 120     | 56     | 4        | 125-131     | 157-161       |
| Total             | 183                | 3,208        | 1     | 1,311   | 1,208   | 1,577  | 1,348    | 3,202     | 15           | 1,651 | 1,235   | 401     | 181    | 15       | 135-137     | 157-161       |
| Average number per child examined | 183 | 17.7 |        |         |         |        |          |            |               |       |         |         |        |          |             |               |

| 12 to 13 years:   |                    |              |       |         |         |        |          |             |               |       |         |         |        |          |             |               |
| Centre City (Slum) | 56                 | 123          | 1     | 26     | 29      | 0      | 9        | 92        | 36           | 102   | 84      | 36      | 16     | 3        | 123-136     | 159-171       |
| Cromwell (Arrian)  | 56                 | 120          | 1     | 26     | 29      | 0      | 9        | 92        | 36           | 102   | 84      | 36      | 16     | 3        | 123-136     | 159-171       |
| Glasnevin, Drumcondra (Middle-class) | 60   | 120          | 1     | 27     | 29      | 0      | 9        | 92        | 36           | 102   | 84      | 36      | 16     | 3        | 123-136     | 159-171       |
| Total             | 172                | 353          | 1     | 74     | 65      | 0      | 0        | 92        | 36           | 102   | 84      | 36      | 16     | 3        | 123-136     | 159-171       |
| Average number per child examined | 172 | 2.04 |        |         |         |        |          |            |               |       |         |         |        |          |             |               |

*See page 5.

v 1 included in Decayed (a) and (b).
w 1 included in Decayed (a) and (b).

Note: The table provides a summary of the dental condition of children in different areas of Dublin County Borough, classified by age-group.
### TABLE 3
**NUMBER OF CHILDREN IN EACH AREA, CLASSIFIED BY AGE-GROUP AND BY NUMBER OF DMF TEETH**

| Age-Group and Area       | Number of Children | Complete Dentitions Free from Caries | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 |
|--------------------------|--------------------|--------------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
|                          |                    |                                      | DMF Deciduous Teeth | Complete Dentitions Free from Caries |
|                          |                    |                                      | DMF Permanent Teeth | Complete Dentitions Free from Caries |
| **5 to 6 years:**        |                    |                                      | DMF Permanent Teeth |
| Dublin Co. Borough       | 177                |                                      | DMF Permanent Teeth |
| Other Town Areas         | 183                |                                      | DMF Permanent Teeth |
| Rural Areas              | 202                |                                      | DMF Permanent Teeth |
| Congested Districts      | 142                |                                      | DMF Permanent Teeth |
| Total                    | 704                |                                      | DMF Permanent Teeth |
| Percentage distribution of children | 4.3 | 0.4 | 6.4 | 6.8 | 6.5 | 7.4 | 8.8 | 8.1 | 10.4 | 6.3 | 5.3 | 4.4 | 4.7 | 4.1 | 2.8 | 1.7 | 1.1 | 0.6 | 0.6 | 0.3 | 0.4 |
| **7 to 8 years:**        |                    |                                      | DMF Permanent Teeth |
| Dublin Co. Borough       | 183                |                                      | DMF Permanent Teeth |
| Other Town Areas         | 185                |                                      | DMF Permanent Teeth |
| Rural Areas              | 253                |                                      | DMF Permanent Teeth |
| Congested Districts      | 182                |                                      | DMF Permanent Teeth |
| Total                    | 803                |                                      | DMF Permanent Teeth |
| Percentage distribution of children | 1.4 | 1.6 | 4.6 | 4.5 | 4.9 | 9.5 | 8.8 | 13.3 | 12.1 | 14.6 | 5.5 | 7.2 | 4.7 | 3.9 | 1.1 | 1.0 | 0.9 | 0.4 | 0.1 |
| **7 to 8 years:**        |                    |                                      | DMF Permanent Teeth |
| Dublin Co. Borough       | 172                |                                      | DMF Permanent Teeth |
| Other Town Areas         | 174                |                                      | DMF Permanent Teeth |
| Rural Areas              | 236                |                                      | DMF Permanent Teeth |
| Congested Districts      | 176                |                                      | DMF Permanent Teeth |
| Total                    | 758                |                                      | DMF Permanent Teeth |
| Percentage distribution of children | 0.9 | 1.2 | 2.5 | 5.5 | 7.5 | 14.1 | 14.5 | 12.6 | 9.2 | 9.2 | 7.1 | 3.3 | 3.3 | 3.2 | 2.0 | 1.5 | 0.4 | 0.7 | 0.1 | 0.3 | 0.4 | 0.5 | 0.4 |

*5 children had no erupted permanent teeth.*
**TABLE 3A**

NUMBER OF CHILDREN IN THE DIFFERENT AREAS OF DUBLIN COUNTY BOROUGHS, CLASSIFIED BY AGE-GROUP AND BY NUMBER OF DMF TEETH

<table>
<thead>
<tr>
<th>Age-Group and Area</th>
<th>Number of Children</th>
<th>All Teeth</th>
<th>Deciduous only</th>
<th>Complete Dentitions free from Caries</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>5 to 6 years</strong></td>
<td></td>
<td></td>
<td></td>
<td>DMF Deciduous Teeth</td>
</tr>
<tr>
<td>Centre City (Slum)</td>
<td>57</td>
<td>3</td>
<td>1</td>
<td>2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22</td>
</tr>
<tr>
<td>Crumlin (Artisan)</td>
<td>56</td>
<td>4</td>
<td>1</td>
<td>2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22</td>
</tr>
<tr>
<td>Glasnevin, Drumcondra (Middle-class)</td>
<td>64</td>
<td>3 1</td>
<td>2 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>177</td>
<td>7 1</td>
<td>5 13 14 9 13 16 22 19 12 8 4 13 7 7 2 1</td>
<td></td>
</tr>
<tr>
<td>Percentage distribution of children</td>
<td>4:0 0:6</td>
<td>2:8 7:3 7:9 5:1 7:3 9:0 12:4 10:7 6:8 4:5 2:3 7:3 4:0 4:0 1:1 0:6 0:6 0:6 1:1</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>7 to 8 years</strong></td>
<td></td>
<td></td>
<td></td>
<td>DMF Deciduous Teeth</td>
</tr>
<tr>
<td>Centre City (Slum)</td>
<td>58</td>
<td>9</td>
<td>6 10 13 19</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22</td>
</tr>
<tr>
<td>Crumlin (Artisan)</td>
<td>58</td>
<td>1</td>
<td>2 5 14 13 19</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22</td>
</tr>
<tr>
<td>Glasnevin, Drumcondra (Middle-class)</td>
<td>67</td>
<td>4 3 5 5 14 10 8 2 6 4 4</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>183</td>
<td>1 1</td>
<td>6 8 8 14 12 29</td>
<td>23 21 10 20 13 12 2 1</td>
</tr>
<tr>
<td><strong>12 to 13 years</strong></td>
<td></td>
<td></td>
<td></td>
<td>DMF Deciduous Teeth</td>
</tr>
<tr>
<td>Centre City (Slum)</td>
<td>56</td>
<td>1</td>
<td>4 3 7 13 6</td>
<td>3 6 6 2 1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1</td>
</tr>
<tr>
<td>Crumlin (Artisan)</td>
<td>56</td>
<td>1</td>
<td>1 3 5 7 6</td>
<td>5 6 3 3 3 3 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1</td>
</tr>
<tr>
<td>Glasnevin, Drumcondra (Middle-class)</td>
<td>60</td>
<td>1 3 6 11 8 4 9 3 4 7 1 1</td>
<td>1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>172</td>
<td>1 2</td>
<td>2 7 7 18 31 21</td>
<td>13 20 15 9 11 5 3 3 1 2 1 1 1</td>
</tr>
</tbody>
</table>

*2 of these children had no erupted permanent teeth
### TABLE IV
**Average DMF Teeth and Average Caries Degree Per Child**

<table>
<thead>
<tr>
<th>Classification by sex and age:</th>
<th>No. of Children</th>
<th>DMF Method I</th>
<th>DMF Method II</th>
<th>Caries Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Deciduous</td>
<td>Permanent</td>
<td>Total</td>
</tr>
<tr>
<td>Boys— 5 to 6 years</td>
<td>33</td>
<td>7.33</td>
<td>0.42</td>
<td>7.76</td>
</tr>
<tr>
<td>&quot; 7 to 8 years</td>
<td>45</td>
<td>6.82</td>
<td>2.33</td>
<td>9.16</td>
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<tr>
<td>&quot; 12 to 13 years</td>
<td>30</td>
<td>0.73</td>
<td>5.30</td>
<td>6.03</td>
</tr>
<tr>
<td>Girls— 5 to 6 years</td>
<td>39</td>
<td>8.18</td>
<td>0.49</td>
<td>8.67</td>
</tr>
<tr>
<td>&quot; 7 to 8 years</td>
<td>44</td>
<td>6.14</td>
<td>2.52</td>
<td>8.66</td>
</tr>
<tr>
<td>&quot; 12 to 13 years</td>
<td>40</td>
<td>0.45</td>
<td>7.73</td>
<td>8.18</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Classification by Area:</th>
<th></th>
<th>Deciduous</th>
<th>Permanent</th>
<th>Total</th>
<th>Deciduous</th>
<th>Permanent</th>
<th>Total</th>
<th>Deciduous</th>
<th>Permanent</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dublin Co. Borough</td>
<td>53</td>
<td>5.47</td>
<td>3.11</td>
<td>8.58</td>
<td>4.98</td>
<td>1.62</td>
<td>6.60</td>
<td>13.08</td>
<td>5.30</td>
<td>18.38</td>
</tr>
<tr>
<td>Other Town Areas</td>
<td>55</td>
<td>5.31</td>
<td>2.98</td>
<td>8.29</td>
<td>4.82</td>
<td>2.02</td>
<td>6.84</td>
<td>12.55</td>
<td>5.51</td>
<td>18.06</td>
</tr>
<tr>
<td>Rural Areas</td>
<td>70</td>
<td>5.11</td>
<td>3.17</td>
<td>8.29</td>
<td>4.64</td>
<td>1.91</td>
<td>6.56</td>
<td>12.19</td>
<td>5.79</td>
<td>17.97</td>
</tr>
<tr>
<td>Congested Districts</td>
<td>53</td>
<td>4.49</td>
<td>3.13</td>
<td>7.62</td>
<td>3.89</td>
<td>1.42</td>
<td>5.30</td>
<td>10.32</td>
<td>5.02</td>
<td>15.34</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Classification by family income per head per week:</th>
<th></th>
<th>Deciduous</th>
<th>Permanent</th>
<th>Total</th>
<th>Deciduous</th>
<th>Permanent</th>
<th>Total</th>
<th>Deciduous</th>
<th>Permanent</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unknown</td>
<td>3</td>
<td>10.00</td>
<td>3.33</td>
<td>13.33</td>
<td>9.00</td>
<td>2.33</td>
<td>11.33</td>
<td>23.67</td>
<td>5.67</td>
<td>29.33</td>
</tr>
<tr>
<td>Under 10/-</td>
<td>36</td>
<td>4.33</td>
<td>2.50</td>
<td>6.83</td>
<td>3.78</td>
<td>1.14</td>
<td>4.92</td>
<td>10.11</td>
<td>3.92</td>
<td>14.03</td>
</tr>
<tr>
<td>10/- to 20/-</td>
<td>85</td>
<td>5.15</td>
<td>3.27</td>
<td>8.42</td>
<td>4.60</td>
<td>1.93</td>
<td>6.53</td>
<td>12.21</td>
<td>5.84</td>
<td>18.05</td>
</tr>
<tr>
<td>20/- to 30/-</td>
<td>56</td>
<td>4.98</td>
<td>3.25</td>
<td>8.23</td>
<td>4.59</td>
<td>1.71</td>
<td>6.30</td>
<td>11.98</td>
<td>5.64</td>
<td>17.63</td>
</tr>
<tr>
<td>Over 30/-</td>
<td>51</td>
<td>5.39</td>
<td>3.08</td>
<td>8.47</td>
<td>4.88</td>
<td>1.92</td>
<td>6.80</td>
<td>12.53</td>
<td>5.59</td>
<td>18.12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Classification by social group of head of household:</th>
<th></th>
<th>Deciduous</th>
<th>Permanent</th>
<th>Total</th>
<th>Deciduous</th>
<th>Permanent</th>
<th>Total</th>
<th>Deciduous</th>
<th>Permanent</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farmers, valuation £15 and over</td>
<td>16</td>
<td>5.13</td>
<td>2.13</td>
<td>7.25</td>
<td>4.44</td>
<td>1.25</td>
<td>5.69</td>
<td>11.63</td>
<td>3.63</td>
<td>15.25</td>
</tr>
<tr>
<td>White collar workers</td>
<td>58</td>
<td>5.26</td>
<td>2.98</td>
<td>8.24</td>
<td>4.84</td>
<td>1.78</td>
<td>6.62</td>
<td>12.12</td>
<td>5.47</td>
<td>17.59</td>
</tr>
<tr>
<td>Manual workers</td>
<td>151</td>
<td>5.14</td>
<td>3.17</td>
<td>8.30</td>
<td>4.59</td>
<td>1.72</td>
<td>6.31</td>
<td>12.28</td>
<td>5.40</td>
<td>17.68</td>
</tr>
<tr>
<td>Widows (occupations not stated)</td>
<td>6</td>
<td>2.50</td>
<td>5.33</td>
<td>7.83</td>
<td>2.50</td>
<td>3.83</td>
<td>6.33</td>
<td>6.50</td>
<td>10.67</td>
<td>17.17</td>
</tr>
<tr>
<td>Class</td>
<td>No. of Children</td>
<td>DMF Method I</td>
<td>DMF Method II</td>
<td>Caries Degree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------</td>
<td>-----------------</td>
<td>--------------</td>
<td>---------------</td>
<td>---------------</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Deciduous</td>
<td>Permanent</td>
<td>Total</td>
<td>Deciduous</td>
<td>Permanent</td>
<td>Total</td>
<td>Deciduous</td>
<td>Permanent</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Classification by age of mother at birth of child:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15-19 years</td>
<td>4</td>
<td>6:75</td>
<td>2:25</td>
<td>9:00</td>
<td>6:50</td>
<td>1:25</td>
<td>7:75</td>
<td>16:25</td>
<td>3:75</td>
<td>20:00</td>
</tr>
<tr>
<td>40-44 years</td>
<td>14</td>
<td>7:29</td>
<td>1:57</td>
<td>8:86</td>
<td>6:79</td>
<td>0:93</td>
<td>7:72</td>
<td>17:79</td>
<td>2:57</td>
<td>20:36</td>
</tr>
<tr>
<td>45-49 years</td>
<td>1</td>
<td>1:00</td>
<td>3:00</td>
<td>4:00</td>
<td>1:00</td>
<td>2:00</td>
<td>3:00</td>
<td>2:00</td>
<td>5:00</td>
<td>7:00</td>
</tr>
<tr>
<td>Classification by parity at birth:</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>7</td>
<td>5:29</td>
<td>3:57</td>
<td>8:86</td>
<td>4:86</td>
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<td>6:86</td>
<td>13:43</td>
<td>5:86</td>
<td>19:29</td>
</tr>
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<td>20</td>
<td>4:70</td>
<td>4:55</td>
<td>9:25</td>
<td>4:30</td>
<td>2:75</td>
<td>7:05</td>
<td>11:80</td>
<td>7:95</td>
<td>19:75</td>
</tr>
<tr>
<td>7</td>
<td>25</td>
<td>4:00</td>
<td>3:68</td>
<td>7:68</td>
<td>3:60</td>
<td>2:12</td>
<td>5:72</td>
<td>9:00</td>
<td>6:56</td>
<td>15:56</td>
</tr>
<tr>
<td>9</td>
<td>7</td>
<td>6:29</td>
<td>3:71</td>
<td>10:00</td>
<td>5:71</td>
<td>2:00</td>
<td>7:71</td>
<td>15:00</td>
<td>6:29</td>
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</tr>
<tr>
<td>11</td>
<td>1</td>
<td>1:00</td>
<td>1:00</td>
<td>2:00</td>
<td>1:00</td>
<td>1:00</td>
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<td>2:00</td>
</tr>
<tr>
<td>12 or over</td>
<td>2</td>
<td>6:50</td>
<td></td>
<td>6:50</td>
<td>6:00</td>
<td></td>
<td>6:00</td>
<td>13:50</td>
<td></td>
<td>13:50</td>
</tr>
<tr>
<td>Classification by degree of sufficiency of calcium in diet during pregnancy*:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>94</td>
<td>5:20</td>
<td>3:38</td>
<td>8:59</td>
<td>4:70</td>
<td>2:03</td>
<td>6:73</td>
<td>12:51</td>
<td>5:96</td>
<td>18:47</td>
</tr>
<tr>
<td>3</td>
<td>61</td>
<td>5:00</td>
<td>2:85</td>
<td>7:85</td>
<td>4:39</td>
<td>1:33</td>
<td>5:72</td>
<td>11:75</td>
<td>4:57</td>
<td>16:33</td>
</tr>
<tr>
<td>5</td>
<td>28</td>
<td>5:54</td>
<td>1:61</td>
<td>7:14</td>
<td>5:00</td>
<td>0:89</td>
<td>5:89</td>
<td>12:93</td>
<td>3:00</td>
<td>15:93</td>
</tr>
<tr>
<td>6</td>
<td>10</td>
<td>5:70</td>
<td>3:00</td>
<td>8:70</td>
<td>5:20</td>
<td>1:90</td>
<td>7:10</td>
<td>13:00</td>
<td>5:40</td>
<td>18:40</td>
</tr>
</tbody>
</table>
### TABLE IV—continued

**AVERAGE DMF TEETH AND AVERAGE CARIES DEGREE PER CHILD**

<table>
<thead>
<tr>
<th>Classification by degree of sufficiency of fruit, vegetables and vitamin C in diet during pregnancy:</th>
<th>No. of Children</th>
<th>DMF Method I</th>
<th>DMF Method II</th>
<th>Caries Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Deciduous</td>
<td>Permanent</td>
<td>Total</td>
<td>Deciduous</td>
</tr>
<tr>
<td>0</td>
<td>64</td>
<td>5.89</td>
<td>3.09</td>
<td>8.98</td>
</tr>
<tr>
<td>1</td>
<td>42</td>
<td>5.40</td>
<td>2.95</td>
<td>8.36</td>
</tr>
<tr>
<td>2</td>
<td>67</td>
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<td>3.09</td>
<td>7.75</td>
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<tr>
<td>3</td>
<td>48</td>
<td>4.52</td>
<td>3.24</td>
<td>7.76</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Classification by degree of sufficiency of cod liver oil or other sources of vitamin D in diet during pregnancy:</th>
<th>No. of Children</th>
<th>DMF Method I</th>
<th>DMF Method II</th>
<th>Caries Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Deciduous</td>
<td>Permanent</td>
<td>Total</td>
<td>Deciduous</td>
</tr>
<tr>
<td>Inadequate</td>
<td>218</td>
<td>5.02</td>
<td>3.18</td>
<td>8.21</td>
</tr>
<tr>
<td>Adequate</td>
<td>13</td>
<td>6.38</td>
<td>1.77</td>
<td>8.15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Classification by quantity of brown bread and “bread and spread” in diet during pregnancy:</th>
<th>No. of Children</th>
<th>DMF Method I</th>
<th>DMF Method II</th>
<th>Caries Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Deciduous</td>
<td>Permanent</td>
<td>Total</td>
<td>Deciduous</td>
</tr>
<tr>
<td>A</td>
<td>94</td>
<td>5.49</td>
<td>2.83</td>
<td>8.32</td>
</tr>
<tr>
<td>B</td>
<td>98</td>
<td>4.77</td>
<td>3.58</td>
<td>8.35</td>
</tr>
<tr>
<td>C</td>
<td>17</td>
<td>4.76</td>
<td>2.76</td>
<td>7.53</td>
</tr>
<tr>
<td>D</td>
<td>22</td>
<td>5.18</td>
<td>2.41</td>
<td>7.59</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Classification by breast feeding:</th>
<th>No. of Children</th>
<th>DMF Method I</th>
<th>DMF Method II</th>
<th>Caries Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Deciduous</td>
<td>Permanent</td>
<td>Total</td>
<td>Deciduous</td>
</tr>
<tr>
<td>Breast-fed less than three months</td>
<td>127</td>
<td>5.35</td>
<td>3.41</td>
<td>8.76</td>
</tr>
<tr>
<td>Breast-fed for three months or more</td>
<td>104</td>
<td>4.80</td>
<td>2.73</td>
<td>7.53</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Classification by degree of sufficiency of calcium in early diet of child*:</th>
<th>No. of Children</th>
<th>DMF Method I</th>
<th>DMF Method II</th>
<th>Caries Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Deciduous</td>
<td>Permanent</td>
<td>Total</td>
<td>Deciduous</td>
</tr>
<tr>
<td>1</td>
<td>8</td>
<td>4.00</td>
<td>3.13</td>
<td>7.13</td>
</tr>
<tr>
<td>2</td>
<td>163</td>
<td>4.74</td>
<td>3.40</td>
<td>8.13</td>
</tr>
<tr>
<td>3</td>
<td>23</td>
<td>5.30</td>
<td>2.04</td>
<td>7.35</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>13.00</td>
<td>2.00</td>
<td>15.00</td>
</tr>
<tr>
<td>Classification by degree of sufficiency of fruit, vegetables and vitamin C in early diet of child:</td>
<td>No. of Children</td>
<td>DMF Method I</td>
<td>DMF Method II</td>
<td>Caries' Degree</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Deciduous</td>
<td>Permanent</td>
<td>Total</td>
<td>Deciduous</td>
<td>Permanent</td>
</tr>
<tr>
<td>0</td>
<td>93</td>
<td>5.28</td>
<td>2.69</td>
<td>7.97</td>
</tr>
<tr>
<td>1</td>
<td>23</td>
<td>3.61</td>
<td>4.74</td>
<td>8.35</td>
</tr>
<tr>
<td>2</td>
<td>45</td>
<td>5.47</td>
<td>3.38</td>
<td>8.84</td>
</tr>
<tr>
<td>3</td>
<td>70</td>
<td>5.11</td>
<td>2.94</td>
<td>8.06</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Classification by degree of sufficiency of cod liver oil or other sources of vitamin D in early diet of child:</th>
<th>Classification by degree of sufficiency of cod liver oil or other sources of vitamin D in early diet of child:</th>
<th>No. of Children</th>
<th>DMF Method I</th>
<th>DMF Method II</th>
<th>Caries' Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deciduous</td>
<td>Permanent</td>
<td>Total</td>
<td>Deciduous</td>
<td>Permanent</td>
<td>Total</td>
</tr>
<tr>
<td>Inadequate</td>
<td>111</td>
<td>4.91</td>
<td>3.53</td>
<td>8.44</td>
<td>4.42</td>
</tr>
<tr>
<td>Adequate</td>
<td>120</td>
<td>5.28</td>
<td>2.71</td>
<td>7.98</td>
<td>4.74</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Classification by quantity of brown bread, porridge and &quot;bread and spread&quot; in early diet of child:</th>
<th>Classification by quantity of brown bread, porridge and &quot;bread and spread&quot; in early diet of child:</th>
<th>No. of Children</th>
<th>DMF Method I</th>
<th>DMF Method II</th>
<th>Caries' Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deciduous</td>
<td>Permanent</td>
<td>Total</td>
<td>Deciduous</td>
<td>Permanent</td>
<td>Total</td>
</tr>
<tr>
<td>A</td>
<td>101</td>
<td>5.20</td>
<td>2.90</td>
<td>8.10</td>
<td>4.62</td>
</tr>
<tr>
<td>B</td>
<td>73</td>
<td>5.15</td>
<td>3.41</td>
<td>8.56</td>
<td>4.70</td>
</tr>
<tr>
<td>C</td>
<td>31</td>
<td>4.55</td>
<td>3.29</td>
<td>7.84</td>
<td>4.13</td>
</tr>
<tr>
<td>D</td>
<td>26</td>
<td>5.23</td>
<td>2.81</td>
<td>8.04</td>
<td>4.69</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Classification by quantity of sugar, sweets and jam in early diet of child:</th>
<th>Classification by quantity of sugar, sweets and jam in early diet of child:</th>
<th>No. of Children</th>
<th>DMF Method I</th>
<th>DMF Method II</th>
<th>Caries' Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deciduous</td>
<td>Permanent</td>
<td>Total</td>
<td>Deciduous</td>
<td>Permanent</td>
<td>Total</td>
</tr>
<tr>
<td>0</td>
<td>115</td>
<td>4.37</td>
<td>3.50</td>
<td>7.86</td>
<td>3.83</td>
</tr>
<tr>
<td>1</td>
<td>79</td>
<td>6.23</td>
<td>2.43</td>
<td>8.66</td>
<td>5.75</td>
</tr>
<tr>
<td>2</td>
<td>30</td>
<td>5.53</td>
<td>2.87</td>
<td>8.40</td>
<td>4.93</td>
</tr>
<tr>
<td>3</td>
<td>7</td>
<td>2.57</td>
<td>5.29</td>
<td>7.86</td>
<td>2.57</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Classification by degree of sufficiency of calcium in present diet of child:</th>
<th>Classification by degree of sufficiency of calcium in present diet of child:</th>
<th>No. of Children</th>
<th>DMF Method I</th>
<th>DMF Method II</th>
<th>Caries' Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deciduous</td>
<td>Permanent</td>
<td>Total</td>
<td>Deciduous</td>
<td>Permanent</td>
<td>Total</td>
</tr>
<tr>
<td>0</td>
<td>107</td>
<td>5.41</td>
<td>2.76</td>
<td>8.17</td>
<td>4.82</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>8.00</td>
<td>8.00</td>
<td>8.00</td>
<td>8.00</td>
</tr>
<tr>
<td>2</td>
<td>37</td>
<td>5.38</td>
<td>3.92</td>
<td>9.30</td>
<td>5.08</td>
</tr>
<tr>
<td>3</td>
<td>62</td>
<td>5.08</td>
<td>3.27</td>
<td>8.35</td>
<td>4.60</td>
</tr>
<tr>
<td>5</td>
<td>24</td>
<td>3.21</td>
<td>3.08</td>
<td>6.29</td>
<td>2.63</td>
</tr>
</tbody>
</table>
### TABLE IV—continued

<table>
<thead>
<tr>
<th>Classification by degree of sufficiency of fruit, vegetables and vitamin C in present diet of child:</th>
<th>No. of Children</th>
<th>DMF Method I</th>
<th>DMF Method II</th>
<th>Caries Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Deciduous</td>
<td>Permanent</td>
<td>Total</td>
<td>Deciduous</td>
</tr>
<tr>
<td>0</td>
<td>59</td>
<td>6.10</td>
<td>2.25</td>
<td>8.36</td>
</tr>
<tr>
<td>1</td>
<td>32</td>
<td>3.56</td>
<td>3.91</td>
<td>7.47</td>
</tr>
<tr>
<td>2</td>
<td>69</td>
<td>5.17</td>
<td>3.20</td>
<td>8.38</td>
</tr>
<tr>
<td>3</td>
<td>71</td>
<td>4.89</td>
<td>3.35</td>
<td>8.24</td>
</tr>
</tbody>
</table>

| Classification by degree of sufficiency of cod liver oil or other sources of vitamin D in present diet of child: |
|-------------------------------------------------|-----------------|--------------|---------------|---------------|
|                                                                                      | No. of Children | DMF Method I | DMF Method II | Caries Degree |
|                                                                                      | Deciduous | Permanent | Total | Deciduous | Permanent | Total | Deciduous | Permanent | Total |
| Inadequate                                                                          | 156      | 4.78       | 3.60 | 8.37 | 4.28 | 2.12 | 6.39 | 11.40 | 6.42 | 17.83 |
| Adequate                                                                           | 75       | 5.77       | 2.08 | 7.85 | 5.24 | 1.01 | 6.25 | 13.39 | 3.37 | 16.76 |

| Classification by quantity of brown bread, porridge and "bread and spread" in present diet of child: |
|-------------------------------------------------|-----------------|--------------|---------------|---------------|
|                                                                                      | No. of Children | DMF Method I | DMF Method II | Caries Degree |
|                                                                                      | Deciduous | Permanent | Total | Deciduous | Permanent | Total | Deciduous | Permanent | Total |
| A                                                                                   | 96       | 4.86       | 3.09 | 7.96 | 4.43 | 1.81 | 6.24 | 11.63 | 5.50 | 17.13 |
| B                                                                                   | 91       | 5.27       | 3.26 | 8.54 | 4.76 | 1.82 | 6.58 | 12.58 | 5.69 | 18.27 |
| C                                                                                   | 30       | 5.03       | 2.97 | 8.00 | 4.50 | 1.63 | 6.13 | 11.40 | 5.03 | 16.43 |
| D                                                                                   | 14       | 5.71       | 2.43 | 8.14 | 4.79 | 1.21 | 6.00 | 12.86 | 4.14 | 17.00 |

| Classification by quantity of sugar, sweets and jam in present diet of child: |
|-------------------------------------------------|-----------------|--------------|---------------|---------------|
|                                                                                      | No. of Children | DMF Method I | DMF Method II | Caries Degree |
|                                                                                      | Deciduous | Permanent | Total | Deciduous | Permanent | Total | Deciduous | Permanent | Total |
| 0                                                                                   | 123      | 4.52       | 3.16 | 7.68 | 3.95 | 1.80 | 5.76 | 10.48 | 5.56 | 16.04 |
| 1                                                                                   | 71       | 5.59       | 2.92 | 8.51 | 5.23 | 1.59 | 6.82 | 13.38 | 5.04 | 18.42 |
| 2                                                                                   | 30       | 6.00       | 2.90 | 8.90 | 5.27 | 1.57 | 6.83 | 14.37 | 4.90 | 19.27 |
| 3                                                                                   | 7        | 6.43       | 4.86 | 11.29 | 6.43 | 3.43 | 9.86 | 16.14 | 9.43 | 25.57 |
TABLE IV—continued

AVERAGE DMF TEETH AND AVERAGE CARIES DEGREE PER CHILD

<table>
<thead>
<tr>
<th>Classification by condition of teeth of mother during her childhood:</th>
<th>No. of Children</th>
<th>DMF Method I</th>
<th>DMF Method II</th>
<th>Caries Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Deciduous</td>
<td>Permanent</td>
<td>Total</td>
<td>Deciduous</td>
</tr>
<tr>
<td>Bad</td>
<td>31</td>
<td>5.65</td>
<td>3.06</td>
<td>8.71</td>
</tr>
<tr>
<td>Fair</td>
<td>10</td>
<td>5.50</td>
<td>3.10</td>
<td>8.60</td>
</tr>
<tr>
<td>Good</td>
<td>100</td>
<td>4.86</td>
<td>2.70</td>
<td>7.56</td>
</tr>
<tr>
<td>Unknown</td>
<td>90</td>
<td>5.13</td>
<td>3.57</td>
<td>8.70</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Classification by condition of teeth of father during his childhood:</th>
<th>No. of Children</th>
<th>DMF Method I</th>
<th>DMF Method II</th>
<th>Caries Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Deciduous</td>
<td>Permanent</td>
<td>Total</td>
<td>Deciduous</td>
</tr>
<tr>
<td>Bad</td>
<td>17</td>
<td>5.29</td>
<td>4.47</td>
<td>9.76</td>
</tr>
<tr>
<td>Fair</td>
<td>10</td>
<td>2.90</td>
<td>3.20</td>
<td>6.10</td>
</tr>
<tr>
<td>Good</td>
<td>114</td>
<td>4.91</td>
<td>2.80</td>
<td>7.71</td>
</tr>
<tr>
<td>Unknown</td>
<td>90</td>
<td>5.54</td>
<td>3.22</td>
<td>8.77</td>
</tr>
</tbody>
</table>

| Total | 231 | 5.10 | 3.10 | 8.20 | 4.59 | 1.76 | 6.35 | 12.05 | 5.43 | 17.48 |

* Measure of sufficiency of calcium: Milk adequate = 3; Cheese adequate = 2. If calcium tablets were taken 3 was added to code number but the maximum code number was taken as 6.
† Fruit adequate = 1; Vegetables adequate = 1; Vitamin C adequate = 1.
‡ Excessive sugar = 1; Excessive jam = 1; Excessive sweets = 1.
§ A = Normal quantity brown bread.
B = Normal quantity brown bread; "bread and spread" excessive.
C = Excessive brown bread and/or porridge.
D = Excessive brown bread and/or porridge; "bread and spread" excessive.
As is to be expected, there is a marked variation of average DMF teeth and average caries degree per child between the different sexes and age-groups. It is, of course, evident that such a variation with age exists, and the variation with sex and age separately will be considered later. In only a few of the other cases is there any sign of apparent variation of dental condition with level of the ancillary factors. Classification by breast-feeding shows, for both deciduous and permanent teeth, that the average DMF teeth and the average caries degree are less in the group of children who were breast-fed for three months or more than in those who were breast-fed for less than three months. The classification by degree of sufficiency of cod liver oil and other sources of vitamin D in the early diet of the child shows that, for permanent teeth, the dental condition is better in the group of children with an adequate intake than in the other group. The classification by degree of sufficiency of cod liver oil and other sources of vitamin D in the present diet of the child shows that average DMF teeth and average caries degree for permanent teeth is less in the group with an adequate intake of vitamin D than in the other group.

Each classification in Table IV was tested for significant differences between classes by compiling, in each case, the variances within classes and between classes and testing the ratios for significance.

Table V shows those items which were found to be significant, † indicating significance at the 5 per cent. level, and †† indicating significance at the 1 per cent. level.
TABLE V
SIGNIFICANT VALUES OF THE RATIO OF THE VARIANCE WITHIN CLASSES TO THAT BETWEEN CLASSES FOR CLASSIFICATIONS BY ANCILLARY FACTORS

<table>
<thead>
<tr>
<th>Classification</th>
<th>DMF (1)</th>
<th>DMF (2)</th>
<th>Caries Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Deciduous</td>
<td>Permanent</td>
<td>Total</td>
</tr>
<tr>
<td>Sex and age</td>
<td>++</td>
<td>++</td>
<td>+</td>
</tr>
<tr>
<td>Parity at birth</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sufficiency of vitamin D during pregnancy</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Breast feeding</td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>Sufficiency of calcium in early diet of child</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Quantity of sugar, sweets and jam in early diet of child</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sufficiency of vitamin D in present diet of child</td>
<td>-</td>
<td>++</td>
<td>-</td>
</tr>
<tr>
<td>Quantity of sugar, sweets and jam in present diet of child</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

† Denotes significance at 5 per cent. level.  †† Denotes significance at 1 per cent. level. — Denotes no significance
These results are not conclusive and no deductions can be drawn, for with twenty-two independent variables (omitting sex and age) and nine dependent variables, there are in all one hundred and ninety-eight tests of significance and one would expect about ten significant values at the 5 per cent. level to arise by chance. It was thought desirable, on account of the evident relationship between dental condition and age, to eliminate the effect of age in a few of the cases in Table V. For this analysis the approximate method of compilation published on page 220 of Kendall’s “Advanced Theory of Statistics, Volume II,” was used.

### TABLE VI

**SIGNIFICANT VALUES OF THE RATIO OF THE VARIANCE WITHIN CLASSES TO THAT BETWEEN CLASSES FOR CERTAIN CLASSIFICATIONS BY ANCILLARY FACTORS, AFTER ELIMINATION OF EFFECT OF AGE**

<table>
<thead>
<tr>
<th>Classification</th>
<th>DMF (1)</th>
<th></th>
<th>DMF (2)</th>
<th></th>
<th>CARIES DEGREE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Deciduous</td>
<td>Permanent</td>
<td>Deciduous</td>
<td>Permanent</td>
<td>Deciduous</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td>†</td>
<td></td>
<td>†</td>
<td></td>
</tr>
<tr>
<td>Breast-fed</td>
<td></td>
<td>†</td>
<td></td>
<td>†</td>
<td></td>
</tr>
<tr>
<td>Sufficiency of vitamin D during pregnancy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

† Denotes significance at 5 per cent. level.
— Denotes no significance.

It will be observed that, when the effect of age is eliminated, there are significant differences between the sexes and between the two breast-fed groups in the case of permanent teeth. There is, however, no significant difference between the groups having an adequate intake and an inadequate intake of vitamin D. For this classification the significant differences observed in Table V were, therefore, due to age effects. Apparently, the group of children whose mothers had an adequate intake of vitamin D during pregnancy had a younger average age than the other group, thus leading to the significant differences observed.

On account of the labour involved in carrying out a large number of compilations to eliminate age effects it was not considered that the results that might be obtained would merit further analysis.

The results of the social investigation inquiry are, therefore, negative in character. Although the variation of dental condition within families is
DENTAL CARIES IN IRELAND

much smaller than that between families, the factors which cause this difference have not yet been identified. Extended as was the range of ancillary factors analysed, there must be some others to account for the marked similarity in degree of dental caries amongst children of the same family. Even when regard is taken of the difficulty of obtaining correct information in respect of the early diet of the children, etc., if there were no bias in the information furnished, it should be possible to identify any significant ancillary factors responsible for affecting the incidence of dental caries.